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ABSTRACT

In addition to the special addresses, the proceedings contain speeches on the following topics: (1) intercollegiate athletics, (2) the history of sport, (3) teacher education, (4) basic instruction, (5) intramural athletics, and (6) research. Some of the materials presented in the research section include papers on exercise, motor skills, muscular strength, and physical training and performance. Also presented in the proceedings are the president's report, financial reports, minutes from the previous meeting, and reports from the standing committees, the president's committees, and the joint committee. Lists of NCPEAM members, committee members, and officers are also included. (RC)

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69th

Proceedings
Annual Meeting

December 27–29, 1965
Philadelphia, Pennsylvania

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Presidential Address

Physical Education in the Changing Cities

ARTHUR WESTON
Brooklyn College of the City University of New York

It is good to be proud of the past, but not to be entirely satisfied with it. It is good to have faith in the future, but faith alone won't shape it. What the National College Physical Education Association for Men has accomplished determines where it stands today, but not necessarily where it will stand tomorrow. This organization is only as strong as the nourishment fed its roots by the members.

As we meet here in Philadelphia, we all know about important advances made in physical education in our schools and colleges. We have participated in developing new physical education curriculums which surpass anything prior to World War II. We have fine teacher preparation programs in physical education in a large number of our leading colleges and universities. We have important research programs in progress throughout the country. Support for physical education has come from the highest offices in the land—from Presidents Eisenhower, Kennedy, and Johnson. Support comes from national and state physical fitness organizations, from Justice Byron White of the Supreme Court, from the American Medical Association, and from many leaders in the professions.

Those of you here today are certainly aware that we are securing important evidence to support physical education as an essential part of the education of children and youth. A recent *New York Times* article stated that "The fit shall inherit the best report cards." Studies were cited from Groton, Andover, University of Southern California, West Point, and colleges in England to show that the relationship between physical fitness and academic achievement warrants this type of statement.

But, as we look beyond all this support, we find a great many required physical education programs in serious trouble, teacher education programs charged as havens for scholarship athletes, and facilities and equipment inadequate to meet the demands of present-day physical education programs. Reports from the Office of Education tell us that 47 percent of elementary schools in the nation do not have a gymnasium, and only 2 percent of the high school population have physical education five times per week. Fewer than 50 percent of high school youth have physical education two or three times per week. And the most unfortunate statistic of all may be the one that shows that in a 40-minute physical education period, a student usually gets only seven minutes of vigorous physical activity. The reasons are many why physical education is facing serious problems and you, as leaders in this field, are aware of these problems.

From the serious problems facing physical education today, I have selected the problem of inadequate facilities and equipment as the focal point of this address. I have selected this problem for several very important reasons. This Association has always maintained a leadership position in promoting the development of physical education facilities and equipment. Our cities are in transition, and facilities and equipment for physical education in schools and colleges are not adequate to meet the demands of our programs. You are well aware of the harm that is done to physical education when inadequate or nonexistent facilities and equipment face the teacher of physical education. The NCPEAM must come forward again and exert the leadership that is needed to solve this serious problem facing schools and colleges in the changing cities. And our professional physical education specialists must assume a leadership role in securing facilities and equipment in the cities so that the program of physical education can be continued beyond the school day—afternoons, evenings, and weekends.

The changing city may become the most serious problem confronting physical education in this century. Can physical education adjust and develop programs that will meet the needs of the city? Can facilities and equipment be obtained for physical education for the schools, colleges, and community centers? Is the cost per square foot of land going to be prohibitive as far as facilities are concerned? If so, what modifications are necessary in our programs for the years ahead? An examination of physical education in the changing cities is the prime consideration in this paper. But we must realize that the time has come when our responsibilities in physical education go beyond the schools and colleges to include the creation of sports and recreation centers for the youth of the cities. For physical education to be successful in the decades immediately ahead, we must understand the problems of the cities, develop physical education programs to meet the needs and interests of the youth of the cities, and provide the leadership that will convince school administrators, boards of education, city planning agencies, and political leaders that physical education programs, including adequate facilities and equipment, are essential.

The American city is the place where most physical education programs are going to be organized and taught in the years ahead. The city will be what we want to make it. This point is very well stated in a book called *The City Is the Frontier* by Charles Abrams, chairman of the City Planning Department at Columbia University. He states:

> A city, even an American city, is the pulsating product of the human hand and mind, reflecting man's history, his struggle for freedom, his creativity, his genius, and his selfishness and errors. . . . It is a composite of trials and defeats, of settlement houses, churches and schoolhouses, of aspirations, images and memories. A city has values as well as slums, excitement as well as conflict. It has a personality that has not yet been obliterated by its highways and gas stations; it has a spirit as well as a set of arteries, and a voice that speaks the hopes as well as the disappointments of its people.

The American city is in transition; and the changes taking place have important effects upon physical education. Nearly 75 percent of this country's population live in metropolitan areas today, and not all of them are happy about it. The industrial and scientific revolutions have dramatically reversed the distribution of population. The most recent urban development is the wave of migration from the central city to the suburbs. This movement has created the metropolis which involves a degree of human contact and social complexity never before known. The change for human beings is so recent that the full implications for man's organic and social evolution have not been determined thus far.

The evolution of our cities is bringing about a profound change in man's attitude toward land and living space. There is no shortage of land. Rather, there are problems of effective use and organization of land and space. Approximately 70 percent of the population is living on 1 percent of the land in this country. By the year 2000 Census Bureau experts predict that 80 percent of the population will live on 2 percent of the land. The most effective and appropriate use of land in metropolitan areas is still an uncharted frontier. The space problems of metropolitan areas arise not from actual shortages of land but from lack of planning, waste of space, and from unnecessary spoiling of the environment.

The cities in this country have many admirable features. The incidence of disease is low, and the material standard of living higher than it has ever been in mankind's history. The modern metropolis provides unprecedented opportunities for education and entertainment. For millions of people it offers new ways of life that seem far more attractive to them than the old ones from which they are breaking away. Nonetheless, the metropolis has problems that are monumental and notorious. Many of these are social and economic problems, but not the least of them is the harsh and confusing physical environment that has been created, which in itself aggravates social and personal problems. The worst enemy of progress in the cities is the cynical notion that the cities' problems are incapable of solution. When our young ambitious couples believe it, they move to the suburbs and the city loses civic energy and economic resources that are badly needed.

Apathy in city planning has led to large scale problems throughout American cities. At this year's annual conference of city mayors there was a general consensus that the most serious problems facing the cities are water supply, crime, air pollution, and transportation. Inadequate city budgets underlie all of these problems. These problems affect the life of the city; they affect education; and they affect physical education both directly and indirectly. When we place physical education in proper perspective, we quickly realize that we must not only have sound programs of physical education in our schools and colleges but that we must follow through with opportunities for students and adults to put the skills learned into practice in homes, and in community organizations including public facilities. While the problems of the city have direct and indirect effects upon physical education, there is only time today to examine briefly (a) water supply, (b) crime, (c) sedentary way of life, and (d) facilities and equipment for physical education within schools and colleges in the changing cities.

The water supply of a city and the need for strict sanitation procedures has a direct effect upon facilities needed for swimming and recreational water activities. Water pollution is leading to the creation of reservoirs that take bodies of water out of circulation for water sports—especially lakes and ponds. Either the water is pure and must not be contaminated by those who would like to use the water for recreational purposes, or it is already contaminated and declared unsanitary for water recreation. New York City and Lake Erie are examples of water supply problems facing the cities. New York City has made reservoirs of numerous lakes as far away as 150 miles from the city, while the mighty Hudson sweeps a million gallons of polluted water past the city every second. U.S. Public Health officials stated recently that five states dump 17 million tons of waste into Lake Erie every day, and that Lake Erie will not be fit to drink from or swim in again in this century. John Lindsay, while campaigning for mayor of New York City last October, stated that our cities are worried about their water supply while standing knee deep in sewage and shooting rockets at the moon. James Quigley, assistant secretary of the Department of Health, Education and Welfare, states that regardless of what was done about city water supply in the past, we must prevent water pollution by every means possible, and this includes preventing people from using bodies of water for recreational purposes if they are needed as sources of city water. While swimming pools can provide many of the facilities for swimming, a pool is not adequate for most recreational water sports. Hence, we have a problem of far-reaching ramifications.

Concerning crime in our cities as a major problem affecting physical education, it may at first glance seem to be a problem for others. However, a sharper focus connects physical education with crime prevention. In the words of President Johnson, "Crime has become a malignant enemy in our cities; the prevalence of crime has begun to erode the quality of our lives."

New York City's police commissioner, Vincent L. Broderick, told a recent graduating class from the police academy that sports and recreation programs are not only desirable but absolutely essential to the mental and physical well-being of the youth of our cities. He was placing special emphasis on the sports program for all students in schools, Police Athletic Leagues, settlement houses, parks, recreation centers, and playgrounds. A special emphasis was placed on the need to keep these facilities open and supervised evenings and seven days a week. He made a special point of stating that public school sports facilities are created with tax funds and should be available to the public when not used by the school.

As college physical educators you may feel that sports programs in penal institutions are outside your bailiwick. Police commissioner Howard R. Leary of Philadelphia does not think so. In an address on penal reform, he stated that the daily program of the inmates must undergo a radical reform. One change must be a physical education and recreation program for the inmates similar to a good high school program. There must be an outlet for the vast physical energy of the prisoners. If they are to be returned to society, a vigorous daily sports program is one measure of great importance in the rehabilitation program. Many of you recall that Clark W. Hetherington was a pioneer for physical education and recreation programs in penal institutions of California in the early years of this century.

The cities are creating a population of sedentary people. This fact is beginning to cause grave concern in the medical professions. When we analyze our daily lives, according to Paul Dudley White, we can see how the active function of our muscles has been gradually taken over by labor saving devices. We do not walk, but ride; we do not climb stairs, we use elevators; we live an automated push-button existence. Even the electric golf cart is now a status symbol. Each new generation is raised to become more sedentary than the one before. Dr. White states that we have come to accept as normal activity what a generation ago would have been considered abnormal. We accept the fact that men and women in their late 30's cannot run, that they are overweight, that they are warned by doctors to watch their hearts, that they need diets, and that they have orthopedic problems that are accepted as just middle-age problems.

The modern city discourages almost every form of physical exercise. We have limited opportunity to move in the cities and little chance to get away from the irritations of the city. The life of the urban dweller is literally cramped and distorted by shortages of space. Exercise is not a part of the daily activity of most people. One is faced by uninviting concrete everywhere—not only in the streets but in the parks. Bicycling, a highly desirable form of exercise that still flourishes in most European countries, is hazardous in American cities. Even the young people are now giving up the sport because they do not have safe areas to ride in. The modern urban dweller is one of the most domesticated creatures to appear in history.

The city contains a cauldron of human passions without providing an avenue of release other than orthopedic difficulties and mental breakdowns. We have excellent programs of physical activity for rehabilitating victims of cardiac disease, polio, and other disabilities, but virtually no reconditioning programs have been launched for the prevention of diseases to sedentary workers. The tension, noise, and general confusion of the city creates stress and strain on people that is frequently more than they can cope with. Lawrence C. Kolb, director of the New York State Psychiatric Institute, states that crowding and tension sharpen conflicts, increase anxieties, rage, and jealousy. It has been estimated that half the hospital beds in the nation are occupied by mental patients.

If the metropolitan cities are where the problems are, they are also where the challenges to government and the opportunities for creative political leadership are. President Johnson and Congress have recognized this fact. A cabinet level Department of Housing and Urban Development has just been established. New federal programs are now in operation against poverty and slum housing, and are providing federal money for education programs. The direction of Washington's efforts is plain. The cities are the new political frontier in this nation. Today's generations are taking it for granted that the federal government will solve the problems. In education, the federal government's Education Acts are channeling federal money to the states. In a few years a steady flow of federal money will move to each local school district, providing money for health, physical education, and recreation programs.

Although our cities are in crisis, they are also in transition. We must gain a factual perspective on the cities. While there is much that is very bad about the cities, there is also much that is good. While one city is on the ropes with a major problem, another city may already be the master of that situation. For example, while New York's crime rate is going up, Chicago's is going down. Though New York's air pollution is the worst in the nation, Pittsburgh and St. Louis have long since demonstrated that this problem can be brought under control. And while water pollution has made New York City an island in a mammoth interstate cesspool, Seattle has conquered this menace and shown the way to natural beauty and public health, and Los Angeles is showing that a huge city can solve its water supply problems when it really tries. If New York's transportation arteries form the longest parking lots in the world, San Francisco is showing one way out by building a whole new area-wide rapid transit system. New York may have more slums than any other city, but Philadelphia is demonstrating that imagination and cooperation between public housing officials and private builders can rehabilitate existing slums.

The concept of city planning has not been put into practice to any great extent in this country. This point received national attention last summer when a group of twenty builders, architects, and city planning commissioners toured England, Sweden, and Denmark to learn how the problems of the city were handled in those countries. The American visitors were stunned with admiration for the modern city developments they saw. City developments are based on an overall regional plan that coordinates transportation, buildings, industry, and recreational areas. The complete operation is on the basis of national needs rather than private profits. Land is considered a public concern, and the physical environment is accepted as a public interest. These European and Scandinavian developments are creating total environments that have not gone beyond the discussion stage in this country. City population expansion is based upon strategically-located rapid transit systems. Their developments are based upon national planning and a state of mind about the national government that is not acceptable in this country.

But our nation is beginning to move in this area through a combination of private enterprise and city planning commissions. And with a steady flow of federal money from Washington, American cities should show marked improvement in the years immediately ahead. Throughout the land we are beginning to see small examples of modern city planning that ensures a total environment for the population involved. The new philosophy that is being demonstrated acknowledges that the central city and its suburbs form an entity, and that total planning for the region is essential rather than planing, business, and industry must be located in close proximity, yet not impinge on one

Although the land in the city is usually privately-owned, this does not preclude appropriate city planning. Zoning and overall city regulations must be enforced. Housing, business, and industry must be located in close proximity, yet not impinge on one another. Rapid transit service must be available to move the people quickly, safely, and comfortably. Schools must be located according to housing of the population. Every effort must be made to provide physical education and recreation facilities and equipment for year around use, seven days a week including evenings.

The range of ideas in dealing with open city space is extremely narrow. We must develop this land to meet the needs of the immediate area. It is necessary to look at the present wastelands of our cities—the vacant lots, abandoned buildings, swamps, dumps, land used for temporary parking lots, and odd bits of city land. They are a magnificent resource for physical education facilities when located close to schools. And frequently they may be excellent locations for public recreational sports facilities.

While the leaders in physical education are aware of the need for adequate facilities and equipment in our field, the cold hard facts are that we do not have adequate facilities and requirement in our city schools. And it is quite obvious that a large percentage of officials who control city and school budgets are not convinced that physical education has the importance we attach to it.

Our leaders in physical education have not yet adapted to the changing city concerning outdoor facilities. The cost of land per square foot in our central cities does not permit expansive, rolling fields for soccer, field hockey, touch football, and softball. We must be realistic and face the fact that the high rise gymnasium is the physical education facility of the future in the central city—with multiple-use facilities constructed wherever possible. The schools in the suburbs may be able to continue with outdoor facilities and frequently work them out in conjunction with parks and nearby public facilities. Florida is experimenting with the educational park, which may be a trend for the suburbs but certainly not for the central city. The value of land per square foot is going to be the determining factor in securing outdoor facilities for our schools in the years ahead.

Another serious problem concerning facilities and equipment is the lack of specialists in our field in this area. This situation must be corrected as soon as possible. We have a very special need for specialists in physical education facilities and equipment on our Ph.D. faculties, with the AAHPER headquarters staff, and with the President's Council on Physical Fitness. The qualifications of this specialist must be, in addition to the Ph.D. in our field, a master's degree in city planning. More than thirty universities offer such a degree. A specialist in our field with these qualifications would be invaluable in the teacher preparation program of graduate students. Such a specialist with the AAHPER headquarters staff and and another with the President's Council on Physical Fitness would be in constant demand as consultants to school boards, building planning committee, and city planning commissions. During the past year this organization has had requests for a consultant in facilities to meet with school boards, Police Athletic League building planning committees, the park planning committee, and three city planning commissions.

The relationship of facilities to physical education has been stated extremely well by Delbert Oberteuffer at the dedication of the new physical education building at the University of Massachusetts on May 17, 1964:

> This building will serve many people in many ways and no one can safely cite its most important utility . . . Students will come here to learn precisely as they will go elsewhere on the campus to learn. This will become an important laboratory of human experience . . . . This building rests firmly upon a foundation of revealed facts about the nature of man and the conditions which make for his development and survival. Let us make no mistake about the place of this building in the educational program of this university; for education is concerned with the development of a man. . . . Our gymnasiums and playgrounds, our swimming pools and athletic fields can be important laboratories where the great experiment in human relationships takes place. The staff here can do no other than to encourage everyone who participates to do his best to extend himself to the point where he knows where his upper limits are . . . . From an educational standpoint we consider this building to be another laboratory on this campus; only in this laboratory the materials worked with are human personalities.

The tremendous support physical education is getting on the national level and from the many professions is raising us to new heights in education. And we must rise to the demands made upon us in every facet of our field. As of today, we are not meeting the demands for adequate facilities and equipment for physical education in our cities' schools. I have no doubt but that this organization will rise again to set the pace in ushering in a new era in facilities and equipment in our cities. But the hour is late, and we have much to do.

Teaching Styles—A Spectrum[1]

MUSKA MOSSTON
Rutgers University

The spectrum of teaching styles, a concept recently developed and tested by our department at Rutgers University, is a theoretical and an operational construct that proposes a particular arrangement of known teaching behaviors. It is conceived as the bridge between the structure of learning and the structure of subject matter. It is an attempt to develop an all-embracing structure for the variety of teaching styles by differentiating and distinguishing between the universal and the idiosyncratic. The intrinsic value of the spectrum of styles is its focus on process. Each style with its proposed rationale and defined behavior identifies a particular kind of process that it a part of the larger and more complete process of teaching and learning, accomplished only if both teacher and student are capable of making the adjustments required in moving along the spectrum.

The spectrum of styles, like any other spectrum, connotes polarity, the existence of alternatives, and the dynamism of continuity. In the search for a structure that fulfills these conditions it became necessary to identify and examine the axes around which current educational thoughts and purposes evolve. By identifying these it was possible to compare the conduct of physical education as a profession with the stated aspirations and actions of education at large. One must turn then to the works of all those interested in learning as a human activity. Its dimensions must be understood and their implications must be translated into the necessary adjustments in the teacher's behavior.

Weston, in the collection of historical documents, most aptly demonstrated the conflict of concepts that has plagued our field for almost a century. Nash, in his volume on mind-body relationships during the early thirties, alerted the profession to the need for examining physical education in light of existing knowledge in the physical and social sciences. Contributors such as Shaw, Sanborn and Hartman; Duncan, Beggs and Baffic; Rowney; Ludwig; Halsey; Findley; Brown and Cassidy; and Davis and Wallis discuss the role of the individual and his potential as a discoverer, problem solver, and self learner. They also proclaim the need to make adjustments and changes in the teaching behavior. International research studies edited by Jokl and Simon offer some insights into the role of culture in affecting programs in physical education. A remarkable contribution to the role of perception in motor learning has been offered by Cratty. A discussion of the role of cognition in learning physical activities in the various styles of the spectrum is presented by Mosston.

These works suggest at least two foci: (a) the individualized learning process, and (b) the cognitive process that is fundamental to all learning. These two targets, although as old as education itself, have received a new and vigorous treatment over the last few years. Bloom's taxonomy handbooks help reclarify educational objectives. Bruner's works on the structure of subject matter and the discovery process reawakened teachers to the role of cognition in learning. Torrance; Kubie; Anderson and Ausubel; Piaget; Polya; and the most recent work by Gangé on the conditions of learning help develop insights into the structure of learning, the components of problem solving, thinking, and creativity.

The existing and available data promote fundamental questions: How does all this affect the teaching behavior? Do teaching behaviors differ? In what way? Can these differences be reproduced and used in a deliberate manner? What adjustments does the teacher need to make if he wishes to learn the alternative styles? How do the alternative styles of teaching relate to the alternative structures of learning?

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[1] Bibliography may be obtained from the author upon request.

In order to answer these questions in an orderly fashion a special "model" was created: *The Anatomy of A Style.* The learning process is conceived here as a continuous chain of decisions made by the students, and the teaching act is conceived as a continuous chain of decisions made by the teacher. It has been observed that there exists a specific relationship between the two sets of decisions. The anatomy of each style reflects this relationship by defining the behavioral role of the teacher and the student. It describes the kinds of things the teacher does and does not do, says and does not say, and the direct and immediate effect on the learning behavior of the student.

In each teaching and learning situation, decisions have to be made about the following three major phases (variables in the anatomy model):

- Pre-class decisions
- Execution decisions
- Evaluation decisions.

Each one of the decision variables is composed of a variety of components about which decisions must be made. Schematically, the anatomy of a style looks like this:

VARIABLES	COMPONENTS	ROLE OF TEACHER?	ROLE OF STUDENT?
Pre-class Decisions	Decisions about subject matter (selection, quantity, distribution, etc.)		
	Decisions about organizational matters		
	Climate and discipline		
	Decisions about the selection and use of the *specific* style		
	Others		
Execution Decisions	Geography—where to stand? Formation?		
	When to start the motion? How long? When to stop		
	How well? (decisions about the desired quality of performance)		
	Decisions about the "climate" in the class.		
	Decisions about the sequence of movements.		
	Others		
Evaluation Decisions	During the class		
	Mass evaluation		
	Individual evaluation		
	What kind of reinforcement?		
	Lack of reinforcement?		
	Testing of any sort?		
	After the class		
	Tests?		
	Comparison with self? Classmates? Local standard? National? Others		

In order to identify and distinguish the alternative models of the anatomy of alternative styles, it is necessary to determine the *theoretical limits* in involvement by teacher, student, or both.

Let us begin with one theoretical limit, which we will call the *command style.* In a pure form of this style *all* the decisions concerning all the variables and components are made by the teacher. This role is assigned to the teacher by the very definition of this style. It is expressed in behavioral terms by the kind, amount, and frequency of stimuli from the teacher during the teaching situation. All represent decisions made by the teacher. The student, on the other hand, obeys, follows, and accepts. This role is assigned to the student, too, by the very definition of this style. This style of teaching behavior obviously has a *specific* effect on the status of the student in at least four developmental channels: physical, social, emotional, and intellectual. The channels range from minimum to maximum development.

One can conceive of high level physical achievement in this style (hence its popularity in many teaching and coaching situations). The status on the social and emotional channels seems to be closer to the minimum limit since there is no opportunity for interaction (by the definition and structure of the style). The intellectual involvement of the student is closest to the minimal limit because all the decisions have been made for him by the teacher.

This style of teaching is closely related to the S-R theory of learning where particular responses are given when particular stimuli are emitted. The values of this kind of teaching-learning are clear in terms of efficiency in immediate results and the singularity of predetermined responses. A single example, a single standard is presented to all learners and it is their role to reproduce it. The evaluation of each individual is done by judging his ability to approximate the predetermined single standard.

Certain assumptions, based on observation of the command style in action, must be made in order to assess its contributions to the education of an individual. These observations can be best summarized in the following table:

What does the command style do?	*What does it not do?*
Establishes clear objectives to be reached by all students.	Does not consider the objectives of individuals.
Develops group discipline that is externally observable.	Does not provide for a wider definition of discipline—inner, self discipline.
Distinguishes the "deviants," or those who cannot reach the standard.	Does not make provisions for differences in ability or in structural and functional attributes. Does not recognize *alternatives*.
Establishes the teacher as the sole decision maker in matters of subject matter, organization, discipline and the like	Does not provide opportunities for small or large decisions to be made by the individual student. Thus, it aborts the potential of the emerging-self.
Establishes student hierarchy determined by best possible procedures of evaluation compatible with this style of teaching.	Does not recognize the existence of alternative multiple hierarchies based on alternative evaluation concepts and procedures
Reflects the philosophy of singularity of purpose and persistence as the virtuous road to the accomplishment of educational goals.	Does not recognize each individual with his multiplicity of differences as the focus of the educational scheme.
Others?	This style does not question its own assets and rarely (if ever) identifies its liabilities.
	Others?

Now, what style of teaching behavior will produce different kinds of observations and assumptions?

In order to discover the next style on the spectrum it is necessary to determine which variables to keep constant and in which variable a change can occur with minimum distress to the whole structure. (At Rutgers, the entire spectrum of styles was successfully tested in operation from first grade through graduate classes in most of the activities and sports which exist in the curriculums of the neighboring schools.)

It has been observed that decision-making can shift to the Role of the Student column in the execution variable. Students can learn to make decisions about *all* the components in this variable. Students can learn to make decisions about where to be on the floor, when to start the movement, when to stop, how much to do, how much they can do, how fast, even how well!

These small adjustments, subtle as they appear to be, are of vital importance since they present to the student an opportunity to develop a new self-image—the image of an individual who is *recognized and accepted* as able to make these decisions. Needless to say, it is a crucial step in the mobility of the teacher along the spectrum. Some teachers cannot make the shift from command style to this alternative, which we call the task style. Even these differences seem to conflict with some teachers' values, concepts of discipline, philosophy of education, and their concept of their own role as teachers.

Nevertheless, this style exists and it is very useful and effective in promoting individualization. In fact this is where the weaning process begins. At the very moment when the individual student has to make a decision and seek an answer to a small or a large question the freeing process has begun. The teacher begins to free himself from the rigidities imposed upon him by the structure of the command style and finds opportunities for a new kind of observation and reinforcement interaction with the individual student. Within the task style we have developed several formats based on the range-of-tasks concept with its quantitative and qualitative varieties which refine even more the individualization process.

Once the weaning process has begun and the individual student learns to be in his new reality, mobility is observed in the four developmental channels. The physical participation level usually increases. A new social climate begins to evolve since the students make their decisions about "geography," and this in turn leads to new interactions among students. This climate and the new responsibilities impinge upon the student's emotional self. Those who need it welcome it. Those who cannot take this "freedom" (and it is important for a teacher to know this) retreat—they openly proclaim: "I need help." (The alternative style must be used with these students for a while.) On the intellectual channel there is only a slight change. Small decisions demand some sort of intellectual activity, but since the tasks and the details involved in their performance are the results of the teacher's decisions about the subject matter, one cannot assign a high intellectual involvement to a student who learns to perform physical tasks (as assigned) by himself.

When a class is well versed in the task style it is ready to move on to more decision making in more areas. The next shift occurs in the evaluation variables. The tasks and their details are presented to the class (decision by the teacher), the execution phase is in progress (decision by the students). Now the students can learn to make decisions in the evaluation phase. One teacher cannot observe the performance of the entire class—the students can! The next style is the use of a partner, in which a partner can observe the doer and can also check performance against criteria, correct errors, and offer reinforcement. This style of reciprocal teaching seems to combine the assets of command and task and adds the dimension of immediate feedback and reinforcement (an important factor in Skinnerian learning theory). The ability to give and accept commentary from a peer is developed in this style. The teacher has an increased opportunity to offer help and reinforcement whenever it is needed. (It is important to direct the teacher's commands to the partner-observer not to the doer so that the partner maintains his status as a teacher-helper.) The change of status of each individual on the developmental channels becomes quite clear. The status on the social and emotional level increases.

At this point the weaning process is moving ahead. Can you imagine walking into a gymnasium and observing an entire class (assigned in pairs) engaged in tightly supervised performance, errors immediately picked up, worked on, and practically erased? What would be, then, the next style in the spectrum? In fact, what *could* be the next style after what seems to be the Utopian situation described in the last style?

We have identified the use of the small group and individual programing as the next two styles. When a teacher reaches this level of individual programing (teacher's design) where the class is practically self operating with each individual pursuing his objective within the program, his own quantity, his own pace—it seems that the ultimate in teaching and learning has been accomplished.

When one observes classes as just described, one realizes that despite the high level of physical involvement, social interaction, development of the emotional self; despite the motivation and decision making process, one dimension is still stunted, restrained—the cognitive dimension.

Psychologists of cognition, such as Piaget, Bruner, Anderson, and Gangé have proposed that only when that which we identify as "the intellect" is engaged in mental operations such as seeking data, asking questions, examining data, finding alternatives, selecting among alternatives, compiling and evaluating data, drawing conclusions, discovering and innovating—only then do we reach a full measure of the cognitive process. Indeed the process of individualization is incomplete until the individual learner is engaged in each one of these cognitive operations.

In observing and analyzing the student's behavior in each one of the preceding styles it becomes clear that the student is not engaged in these cognitive operations on any significant level. They are not required, not induced; neither are they developed. The intellectual capacities of the learner are harnessed and inhibited. They remain dormant, unchallenged and unused. Even those abilities which are partially evoked—such as memory, recall, and some sort of understanding—are in most cases passive and unrelated. In effect, all the previous styles which made significant contributions to the growth of the individual in three important freedoms have curtailed the fourth. Thus far the learner has been in a condition of cognitive aquiescence.

In order to develop potent intellectual behavior which uses and demonstrates the varieties of cognitive operations, the learner must cross the cognitive barrier which exists at this point on the spectrum. Festinger's theory of cognitive dissonance proposes that a cognitive disturbance, an irritation, creates the need to seek a solution and only the act of finding a solution will remove the dissonance. It is proposed here that the state of cognitive acquiescence ceases to exist when cognitive dissonance occurs. New dimensions of the thinking process are aroused. The dissonance induces the process of inquiry which reflects the need to seek an answer, a solution. The process of inquiry leads in turn to discovery. The act of discovery occurs as a result of the cognitive dissonance:

Dissonance ⟶ Inquiry ⟶ Discovery in Developmental Movement.

One of the most fascinating aspects about the discovery process is that people *can* discover many different things. The following are the kind of things that students discovered in our classes and children discovered during the last three seasons in the joint CBS–Rutgers TV program, "Shape Up":

1. Facts (in any subject matter)
2. Ideas, concepts
3. Relationships (similarities, dissimilarities)
4. Principles (governing rules)
5. Order or system
6. A particular physical activity—a movement
7. How?
8. Why?
9. Limits (the dimension of "how much," "how fast," etc.)
10. How to discover.

Any of these categories of things or actions can become focus of discovery and the subject matter itself.

Two distinct styles which demonstrate the discovery concept are guided discovery and problem solving. The most fundamental differences between these two styles past the cognitive barrier is that the teacher *does not tell the answer*! The instant an answer is given to a student the process of cognitive dissonance, inquiry, and discovery ceases to exist.

In order to use these styles the teacher must make two important adjustments:

A. *A linguistic adjustment*—instead of using exclamation words, he shifts to question words.

B. *An emotional adjustment*—the teacher must wait for the answer to come from the student. He needs a high degree of patience in order to create the atmosphere of accepting what the student says or does. The student's response is the focus and it must remain the focus if this process is to continue and succeed.

When this kind of teacher's behavior becomes clear to the student a different set of connotations develops and a different set of actions occurs:

1. The student learns that the teacher is interested in what he has to say or show.
2. He learns that he is expected to give an answer.
3. To give an answer requires an understanding of the question. He must pay attention in order to hear and understand the question.
4. If the question is relevant, it stimulates an active involvement with the teacher and subject matter.

The cognitive process has begun with the introduction of reinforcement in the proper places; the process becomes self-perpetuating.

The main difference between the anatomy of guided discovery and problem solving is in the tightness of sequence of questions and clues which are employed in guided discovery and thus leading the learner to a well-defined target. Each step is based on the responses given in the previous step. The process must be flawless. In its pure form there is no failure.

The cognitive economy in leading a student to comprehend a phenomenon, to see relationships, to understand systems is spectacular and overwhelming. The fact that the student discovered the answer by himself creates a more intimate relationship between the student and the subject matter.

In problem solving the behavior is more open-ended. The questions or problems presented to the student may elicit multiple or alternative solutions, all of which could be correct or relevant responses.

The ability to design either a sequence of clues in guided discovery or a series of relevant problems depends on one's insights into the structure of the subject matter. Only such insights permit the design of problems that stimulate discoveries of data that in turn reconstitute the subject matter itself.

Let us sum up with some statements of applications and implications:

1. It is proposed that the spectrum of styles be applied to the teaching of both theory and activity courses. (In our school, it is used in the foundation course in developmental movement, kinesiology, gymnastics, basketball, baseball, soccer, administration and organization.)

2. It has obvious application to methods courses. (This *is* the content of our year's methods course.)

3. It is used in student teaching.

4. The concept of alternative teaching behavior has been used in the supervision of student teaching.
5. It is used by our graduates in a variety of schools in the state of New Jersey.
6. It is used in workshops with teachers, and in our TV program.

The implications are many. The decision to use the spectrum of styles implies a reexamination of one's philosophy of education. It has implications for one's concept of discipline and the role of both teacher and student. It connotes a deliberate attempt to focus on the process of learning as well as on the results. The implications reach to the very core of our field—the structure of the physical education programs. Perhaps the most demanding extension of the list of implications is the urgent need to assess and perhaps redefine the role of physical education in the curriculum.

Intercollegiate Athletics

Compensation and Load Relief for Athletic Coaching—Some General Observations

RICHARD C. HAVEL
Wayne State University

The establishment and maintenance of equitable salary schedules and optimum teaching loads for faculty members are matters of continuing concern in colleges and universities. Patterns followed differ in varying degrees from one institution to another, and even between departments on the same campus. This diversity is probably more pronounced in the compensation and work load approaches applied to athletic coaches. The administrative problem of creating workable plans for personnel in intercollegiate sports in these areas knows no simple solution.

Conditioning Factors

Several factors condition the extent to which practical salary and work load designs can be developed for coaches. Their status in this respect is dependent upon elements inherent in the character of institutions and their athletic programs.

The nature of the college or university, its educational stature, its sources of financial support, and its athletic heritage affect policies governing the employment of coaching personnel. Situations will vary according to the type and size of institutions studied. Academic standards maintained and curriculum demands placed on students also exert a strong influence on what is done and expected in the area of athletics. All of these conditions have a bearing on the focus in the athletic program in which coaches work.

The athletic philosophy subscribed to by an institution and its executive leadership has an effect on the status of its coaches. Their role depends in large measure on the conditions and expectations described upon initial appointment. The point of view held concerning the purposes of intercollegiate sports determines the extent to which coaches are assigned responsibilities in areas other than athletics. This also conditions the climate established for the intercollegiate program and the manner in which it is conducted and organized.

Administrative structures for intercollegiate athletics take many forms and exercise an influence on the patterns of compensation and load relief established for coaches. Departments of athletics operated as separate entities pose one series of problems. Where intercollegiate sports come under a single administrative officer responsible for for the total physical education program the problems take on a different complexion. The situation is further complicated in those instances where salaries for coaches come from several sources, and coaches are responsible to more than one administrator for assignments. Any plans devised must take into account the organization under which the intercollegiate program is administered and supported.

Institutional personnel policies determine whether faculty status is granted to athletic coaches. In some instances they are accorded rights and privileges shared by all faculty members. In other situations they receive little recognition as bona fide appointees to the faculty at large. The terms under which personnel in intercollegiate athletics are employed will depend on given institutional practices. As a result, a variety of salary and work load patterns for coaches are in existence.

Other factors of a more specific nature provide additional dimensions to the problem. The professional qualifications of coaches sought, the emphasis given certain sports, the scope of the total program of physical education and athletics, and the current policies in force are representative influences which warrant consideration.

Compensation Approaches

The basis on which a coach as a salaried employee receives compensation for assuming athletic responsibilities varies. Funds for service in the intercollegiate program may come from several sources, depending on the budgetary structure in operation.

Where personnel are engaged as full-time members of the faculty, coaching is usually carried as part of the total instructional load. In these cases an annual salary is paid for the position which covers both teaching and coaching responsibilities. This is the practice followed in the majority of institutions. Ordinarily salaries for persons in this category come out of a single instructional budget allocated for all phases of the program of physical education and athletics.

In other situations the source of funds for coaching personnel may be the same but their sole responsibility rests in the area of coaching. Most often this is done in the case of coaches of selected sports where greater emphasis is placed on spectator interest and high level competition. A full faculty load in this instance would be represented entirely by the assignment in coaching.

Another example of being paid for "coaching only" occurs where salaries for coaches come out of a separate budget. This usually occurs where the physical education program and the athletic department operate as two distinct and separate units. In this type of organization dual appointments may also be made and the total salary comes from the budgets of the two departments involved.

Additional compensation for coaching, such as is prevalent in secondary school athletics, is also used on the college level. This approach involves the concept of "extra pay for extra work" and probably its use is not as widespread in colleges and universities.

The "part-time coach" still functions on the intercollegiate scene and can fill an important need. A person in this classification usually is paid either out of instructional funds or from a separate athletic budget. His role in athletics is frequently that of an assistant. Sometimes part-time personnel are also employed to coach activities which are given less emphasis or which are less commonly supported in the intercollegiate program.

Equating Loads

Work loads for college coaches can be computed in several ways, and it is a matter of judgment whether one pattern is better than another. Much of the success of any plan depends on its acceptance and understanding by faculty members and the consistent administrative application of its provisions. Most approaches to this problem utilize as a base the established work load followed in equating academic teaching, with adjustments made for coaching.

The work unit or load credit system is used to advantage in a number of institutions. An optimum total load is determined and various responsibilities assumed by faculty members are assigned values in terms of work units or load credits. Coaches are credited according to their sport assignment at an established figure. Staley reported on a work load formula utilizing this approach in the October 1960 *Physical Educator.*

A common method also employed is the traditional semester hour or quarter hour assignment of credit for teaching and coaching service. Under this pattern a specific hourly load is identified for coaching responsibilities in each sport.

More detailed procedures are involved in other plans in effect at some institutions. The Faculty Staffing Formula of the California State Colleges (August, 1960) is a example of a comprehensive approach to the problem:

> The formula is based on a 40-45 hour work week for all college teachers. This is converted to the equivalent of a 15 unit as follows: 3 unit equivalents (4 to 9 hours a week) for non-teaching assignments normally expected of instructors (such as college service, student program advising, committee work, administrative duties, extra-curricular responsibilities, etc.): and 12 unit equivalents (36 hours a week) of teaching.

Six weighting factors (constant multipliers) of different values are introduced for the various types of instruction carried on in an institution of higher learning. Coaching responsibilities in "major sports" (football, basketball, baseball, and track) carry double the weight of that assigned to "minor sports." This represents a limited description, and the total plan should be studied in its entirety for complete understanding.

Practical Considerations

The development of any work load formula for coaching poses problems of an administrative nature. Their solution is dependent upon the setting in which the plan is to serve, and the type of program in operation. It is desirable that whatever system is devised be consistent with practices employed throughout the institution. Some of the fundamental questions which need to be resolved follow:

1. How does the administrator go about instituting a new plan for computing loads for a coaching staff?
2. What role does the faculty and coaching staff play in the development of a formula for equating teaching and coaching loads in physical education and athletics?
3. On what basis should credit be determined for the coaches of the various sports in the intercollegiate program?
4. How should work loads be equated with respect to assistant coaches in different activities?
5. To what degree should coaches be given credit for responsibilities in a sport out of season?
6. How can duties attendant to coaching such as scheduling, planning, recruiting, public relations, etc., be computed in terms of credit?
7. In the case of individuals having overlapping responsibilities in several sports, how is the formula to be applied?
8. Where dual appointments are made involving separate departments, how should credit be determined?
9. Should the work loads for personnel in other co-curricular areas, including intramurals, women's recreation, dance, athletic training, and sports clubs be treated the same as is done with athletic coaches?

Many others could be cited, since the overall problem involves a number of variables which must be treated in light of the local conditions in existence.

Administrative Implications

It is reasonable to assume that the basic pattern employed in an institution be used as the starting point in developing a workable plan for personnel in physical education and athletics. A survey of practices followed in other situations can prove helpful in providing ideas and possible approaches. Faculty participation in this effort is to be expected and can be utilized to advantage. Ample opportunities provided for discussion and review can also serve to clarify questions and eliminate some of the concerns which usually accompany changes in policy. Any attempt to institute a new plan should be undertaken only after a careful and comprehensive study has been made and all problem areas have been thoroughly examined.

The current status of the program and its projected future warrant administrative consideration in any planning related to faculty loads. In a practical sense the extent to which loads can be distributed equitably in physical education and athletics depends on the qualifications of staff members. An objective assessment of faculty strengths and weaknesses is an important consideration in achieving the most desirable results. Coaches can contribute to other phases of the program if they possess a genuine interest and the necessary professional background to do so. This expectation has definite implications for the criteria used in selecting coaching personnel.

Any faculty load formula established involves specific details and mechanics of implementation. There is always the danger of oversimplification in these matters, and much is contingent upon the framework within which the total program is organized and administered. A work load plan can be administered effectively if the basis on which credit is equated is clearly defined and understood, if all phases of instructional responsibility in the program are covered adequately, and if the provisions are applied fairly and consistently in the assignment of all faculty members.

Work Load for the Teacher-Coach

STAN MARSHALL
South Dakota State University

Several conditioning factors that affect faculty work load for the teacher-coach have been previously cited. I will relate four of these factors to our situation at South Dakota State University.

First, the nature of the institution predetermines certain policies and attitudes toward faculty work load. South Dakota State University is a land grant institution comprising six colleges and functioning in the areas of instruction, research, and the state-wide extension service. It is the largest institution in the state, with an enrollment of 4,700 students. Basic instruction in physical education is offered in 25 activities for men and women. All undergraduate students are required to complete two of these activity courses for a total of two semester credits.

Second, the athletic philosophy of the institution is predicated on the idea that intramural and intercollegiate athletics are a part of physical education. We attempt to sponsor a broad intercollegiate athletic program and at the same time to emphasize the sports of high public interest realistically. We hope to be competitive and successful in all nine intercollegiate sports sponsored by the University. Consistent with the belief that athletics are a part of physical education, all of our coaches are teachers in physical education and related areas. Each has earned at least a master's degree in physical education. Each strives to function as an effective teacher and counselor.

Third, the University administrative structure provides for an integrated, single-department approach to physical education and athletics. The departmental administrator functions in the dual role of athletic director and head of the Department of Physical Education. He is responsible to the president of the University for athletics and to the dean of the College of Arts and Science for physical education. Faculty personnel in the department are responsible for programs in the following five areas:

1. Basic instruction in physical education (service or required program)
2. Professional preparation in physical education
   (a) Undergraduate minor and major in physical education for men and women
   (b) Graduate program in physical education at the master's level
3. Intramural Program
   (a) Intramural competition for men in nineteen activities
   (b) Intramural and extramural programs in eleven activities for women
4. Intercollegiate athletics
   (a) Varsity and freshman cross-country
   (b) Varsity and freshman football
   (c) Varsity and freshman basketball
   (d) Varsity and freshman wrestling
   (e) Varsity and exhibition gymnastics
   (f) Varsity and freshman baseball
   (g) Varsity golf
   (h) Varsity tennis
   (i) Varsity and freshman track and field
5. Teaching responsibility in driver education and air education

Fourth, the institutional personnel policies and practices listed below affect faculty work load in the Department of Physical Education and Athletics.

1. A minimum of forty hours per week is considered full time for twelve-month faculty personnel.
2. Twelve credit hours or fifteen contact hours constitute a full-time teaching load.
3. For thesis, special problems and other independent study courses, credit hours are assigned as follows:
   1–3 contact hours per week, 1 credit hour
   4–6 contact hours per week, 2 credit hours
   7–9 contact hours per week, 3 credit hours
4. For supervising student teaching, credit hours are assigned as follows:
   1 student, 1 credit hour
   2–3 students, 2 credit hours
   4–5 students, 3 credit hours
   6–7 students, 4 credit hours
   8–9 students, 5 credit hours
   10 students, 6 credit hours
5. Student counseling is considered part of the instructor's teaching responsibility. However, an attempt is made to make allowance for heavy counseling loads carried by some faculty members.
6. Service reports are submitted to the administration each semester showing a division of time breakdown on a percentage basis by areas as follows:
   (a) Percent Teaching—that portion of your work-week involved in all functions relating to the instructional program
   (b) Percent Administration—that portion of your work-week involved in the administration of the instructional program
   (c) Percent Organized Research—that portion of your work-week devoted to re-

search supported by the experiment station or other grant monies not in the college proper appropriation budget.

(d) Percent Other Organized Activities—that portion of your work-week devoted to activities outside the classroom but related to the instructional program, such as printing production, athletic coaching, drama, and music coaching.

For the academic year 1965-66, the division of time devoted to teaching by our coaches will range from approximately 15 percent to nearly 100 percent. The average teaching load for the department will be approximately 62 percent of a full-time load.

At present, we do not assign faculty work loads according to a formula. Strict adherence to such a formula may stifle initiative and reduce the willingness to do more than required. Some faculty members are willing and able to effectively carry many responsibilities. Our coaches spend considerable time beyond the forty-hour week. This is undoubtedly true at most institutions, as dedicated coaches devote practically every nonteaching hour in season to thinking about and working at their coaching assignment.

Our approach is flexible and permits us to meet emergencies and to make adjustments as necessary. It is dependent on faculty cooperation and upon a clear understanding of the nature and extent of individual responsibilities by all concerned. The departmental policy manual contains a job description for each staff member. The person in charge must make decisions each term as to who teaches what and how much. This is done with considerable consideration of the individual's abilities, desires, and nonteaching responsibilities.

Work Load Formula at Eastern Michigan University

KEITH BOWEN
Eastern Michigan University

My remarks represent the thinking of a teacher preparation institution which, like so many other traditional or regional teachers colleges, is emerging into university status. In addition to the type of school I feel it is important in many cases to remind ourselves of the setting in which we find a given institution.

Eastern Michigan University is located in a relatively small city, in a heavily populated corner of the state, and in a factory labor-oriented environment. We are only one of several state-supported institutions in Michigan, and we are regional in actual practice. Ninety percent of our supply and demand is found in the more than four million Detroit area of southeastern Michigan. This is the heart of the automobile industry, and the region is distinctly labor union oriented. We are both clock and calendar conscious.

All the men in our Department hold conventional faculty rank, whether or not they coach. We have a few men who do not coach, but none who do not teach classes. Our Department has four major administrative divisions of which athletics is one, headed by a Director of Athletics. We are on a semester calendar.

The following work load designations are adapted from the formula described in the October 1960 issue of the *Physical Educator* by S. C. Staley of the University of Illinois. We use it as a guide, not a strait jacket, and it is received with varying degrees of support.

DEPARTMENT OF HEALTH, PHYSICAL EDUCATION, RECREATION AND ATHLETICS
WORK LOAD FORMULA
(MEN)

March 24, 1964

Approximate staff load = 36-42 per semester

ITEM	WEIGHT
A. Teacher Preparation	
1. Undergraduate theory (per hour)	3
2. Graduate theory (per hour)	4
3. Undergraduate activity	2
B. Service Program Activity	2
C. Administration, etc.	
1. Head of Department	60
2. Division Chairman	42
3. Intramural Director	36
4. Graduate Coordinator	28
5. Athletic Director	42
6. Service Teaching Coordinator	16
D. Athletics	
1. Football	
Head	28
Asst.	18
2. Basketball	
Head	28 (18-10)
Asst.	18 (12-6)
3. Cross Country	16
4. Wrestling	21 (11-10)
5. Gymnastics	21 (11-10)
6. Swimming	21 (11-10)
7. Track	
Head	28 (3-25)
Asst.	19 (3-15)
8. Tennis	16
9. Golf	16
10. Baseball	
Head	28
Asst.	18
11. Trainer	42

History of Sport

The Art and Science of Sport

E. DON McCULLOUGH
Kansas State Teachers College

Historically, sport has been an ever developing area of human knowledge and behavior. Like other bodies of subject matter, sport has been exposed to the scrutiny of countless theories and practices. We, as leaders and developers of sports programs, continually concern ourselves with any and all attempts at crystallizing a formula which will enable the sports participant to realize a richer and fuller life. Today I ask you, as leaders, to reexamine and reflect upon three points of professional importance. First, what do we consider to be sport? Second, what does sport contribute to man and society? Third, is the sports product we are currently providing consistent with the wishes and welfare of society? I do not profess to have an ultimate answer to any of these questions. I doubt seriously if you do, either. This assumption is intended as a compliment, for only the very ignorant are positive to an absolute degree. Because there is only a temporary solution to any continuing social problem, my purpose today is limited to a review of the topic at hand. If my calculated challenge to your professional propriety results in a stimulation of reflection, opinion, and perhaps some action, I shall be content.

All forms of human interest and behavior are based on some combination of certain vital criteria. These criteria must support and complement each other, to the benefit of the particular social phenomena for which they provide a foundation. For example, the social institution of marriage requires two sexes; business and industry depend upon a fair equation of management and labor; economics has its fulcrum of supply and demand. In a similar manner, a foundation exists for that very complex and multifaceted area of human activity which we lump under the title of sport. The foundation is provided by two distinctly visible but thoroughly integrated criteria to which we ascribe the terms of art and science.

Now we have mentioned all three of the key words of the topic at hand. They are, of course, *art*, *science*, and *sport*. Here we face a danger of some magnitude. One of the greatest obstacles to human progress is the inability of people to communicate clearly with one another. This is particularly so when the English language is used as the medium of exchange. A time-honored procedure for anticipating and overcoming possible breakdowns in communication before they occur is the perusal of a volume commonly known as *Webster's*.

The dictionary states that the word *art* is often used interchangeably with the word *skill*. Both imply proficiency or expertness in the practical application of knowledge. A second meaning mentions "human contrivance or ingenuity, as in adapting natural things to man's use." It would appear, therefore, that the quality of art is synonymous with craftsmanship, creativeness, and pride in a job well done. A third reference defines art as "the general principles of any branch of learning." I would take this to mean the established rules of conduct for proceeding with the application of acquired knowledge.

Proceeding to the word *science*, it is said that this term represents "knowledge obtained by study and practice; any department of systematized knowledge; a branch of study concerned with observation and classification of facts; the establishment of verifiable general laws, especially such knowledge when it relates to the physical world."

It is not mere coincidence that definitions of both art and science refer to general laws, or principles. These laws provide a bridge whereby new information resulting from human curiosity is channeled into the life and society of mankind. Specifically, the scientist collects observable fact into related patterns, the formation of which seemingly point toward estimated results. Thus are developed the pure or untried principles which represent the theory of life.

The artist, in turn, takes the speculative conclusions of the scientist and applies them to real-life situations, by ways and means harmonious with the contemplative data gathered by the scientist.

The results of the applied laws are then measured against the contemplated results of the scientist. Finally, a judgment is made as to the contribution of the total action to the welfare and progress of society.

We have seen that both art and science are concerned with the formation and practice of general laws. At this point, a second parallel appears in the relationship. Webster has included such words as study, understanding, practice, and skill in his detailed definitions of both key words.

By now, it is becoming apparent that any scientist of worth must have established certain skills pertinent to the collection of data and the expression of speculative thought. Conversely, an artist of quality will know and understand the basic reasons supporting any social action he undertakes, regardless of his form of expression.

It follows, then, that there can be no hard and fast cleavage between art and science. Nor may such a cleavage exist in the understanding and practice of those who profess to represent any field of human endeavor.

Let us now look to the third partner of the triangle—the meaning of the word *sport*. This exploration must be painstaking, as sport conveys to most of us a way of life which we cherish and pursue with enthusiasm and, quite often, recklessness.

According to Webster, the term *sport* means "that which diverts and makes mirth; pastime; diversion. A diversion of the field, as hunting, fishing, racing, games, especially athletic games." The word *sport* is derived from the Middle English word *disport* and, going beyond that, from the Latin *dis* and *porter*, which combine to mean "to carry away from."

Thus far I have relied rather heavily upon an authoritative definition of the terms found in the title of my presentation. Let me quickly summarize the discussion. Science provides for the observing, collecting, and analyzing of facts (both material and spiritual) into speculative conclusions called theories. Art is the application of scientific fact, in an organized and adaptable manner, toward the solution of life situations. Scientists are basically scholars and thinkers, while artists are technicians and performers. To be of any real value, each must possess and use the qualities of the other. In many cases, one individual will carry out the responsibilities of both scientist and artist, as the researcher and practitioner. Sport, as an essential element of human living, is carried on by formulating and practicing certain laws evolving from the nature of man and the world.

The stage is now set for an examination of the three points of professional concern which I set forth at the start of this paper. Let us take them in their original order of presentation.

Sport has been defined by the keepers of our own language as diversion, entertainment, mirth, amusement and games. Right now I wager that most of us are automatically translating these accepted symbols of social communication into the pedagogical classifications of our profession, as set forth by Jesse Feiring Williams and other able leaders of the clan. The familiar words "recreation, camping and outdoor activities, play and athletics" are no doubt now passing across the reflecting screens of your respective minds. How well do the scientific footings on which rest Webster's interpretations of sport compare with those on which we base our descriptive terms for the subject? If we, who serve as leaders of a social program called sport, interpret the term by a different set of verbal expressions, do we then see and interpret sport as something different from our fellow man, something perhaps contrary to his true nature?

Just what are the scientific data which make the inclusion of sport, in any form, a desirable and important part of life and society? Thomas Woody, in his fine book, *Life and Education In Early Societies*, says,

> Biologists and psychologists emphasize the view that the primary bases of play are found in man's own nature . . . . This natural theory of the origin of sports, comprising, as it does, the factors of native endowments interacting with environmental forces, was not unknown to the ancient world.

Later, in the same book, an ancient Greek quote is given. It is "The world is all a stage, life is a sport."

In writing of Egypt as the birthplace of civilization, Van Dalen, Mitchell, and Bennett (*A World History of Physical Education*) speak of the ancient people in this fashion: ". . . they liked the peaceful and easy-going sociable arts of living. Sports were a part of this preferred life." In *Background Readings for Physical Education* Paterson and Hallberg refer to Herbert Spencer, a noted philosopher. Spencer advanced a theory of social evolution, in which he stated: "Play begins for both animals and men when they have time left over from the struggle for survival. Play largely imitates that struggle and is motivated by the same competitive need to beat the adversary."

Spencer's theory, which has been well substantiated, suggests that play is a serious business and victory is of paramount importance. How factual a basis then are we able to give to our artistic expressions (methods and techniques, if you prefer) which seek to develop the philosophy of "play for the fun of it" or "be a good sport"? Oberteuffer in his book *Physical Education* relates that back in 1943, during World War II, a man named Noel Barber wrote of life in a prison camp:

> Sports . . . keep men happy . . . The seriousness men attach to the big camp matches makes an interesting psychological point. The great peacetime sports teams with their thousands of followers may be far away, but in the camps are crack teams with fans just as ardent.

The late and respected Jackson R. Sharman in *Modern Principles of Physical Education* wrote: "Rule-of-thumb procedures . . . are entirely inappropriate in the administration of physical education when scientifically established data are available as a foundation."

Perhaps the greatest impact in our field in the last half-century was made by Jesse Feiring Williams in his efforts to redirect the field of physical education into what we call the "natural" or "play" approach. Williams's great influence makes his recorded remarks of utmost importance, especially when we relate the prominent role of the words *natural* and *play* in history's recording and description of sport. One of Williams's typical statements is found in his text *Principles of Physical Education*. It goes: "If the natural program is the one which should be developed everywhere then those who accept the dictates of its truths are obligated to put them into operation."

Williams and others of his time developed sound arguments for their beliefs and promoted them by every legitimate means of expression.

There is little doubt as to the scientific verification of sport as a vital and integral part of life. Vastly different, however, are the interpretations of just what sport is and how it relates to the needs and richness of life itself. We teachers and coaches are charged with preparing and performing efficiently as scientists and as artists in the realm of sport. How productive are we?

Scientific evidence clearly shows that man first competes to survive and, in his free time, tends to imitate or practice for the continuing life struggle. History records sport as being based on the skills of warfare, livelihood, and production. Their aim has always been to dominate the adversary. When we speak of playing for fun and with consideration for others, are we being imaginative in a new-found artistic sense of expressive technique, or are we being romantic and unrealistic? Is there a place for human compassion and compromise in the sport scene or do we heed the democratic opinion of the majority and follow the "victory at all cost" tradition that has characterized sport for man through the ages of time?

In concluding these reflections, I ask myself, as each of you must ask himself, what sort of scientist and artist am I? What sort of scholar and technician am I? How established a scholar and technician? To what depth and breadth extends my professional philosophy? Is it based on facts which I understand and relate, one to the other? How creative am I, and how expressive in portraying my technique and methods so as to successfully communicate to those in my charge?

There is one fundamental difference between ourselves and our fellow artists. Their works are on canvas or of marble. If not deemed worthwhile, they are stacked in a dusty corner of some studio or are tossed into the trash barrel. Our works are flesh and blood and must continue their lives even if discarded in the dusty corners and back alleys of society.

Dramatize the Past

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The history of any single sport played in this country today is an accumulation of a multitude of facts, names, dates, and organizations. The teacher of any sport who feels obligated to present its history has to make his own selection from a welter of available facts or else rely on the uninspiring historical summaries given in physical education handbook or manuals. The result of this procedure is generally bordeom for the class and a sense of relief for the instructor when he has finished. The unit on history usually comes first, and it does serve the useful purpose of increasing the desire of the students to get some big muscle activity, if nothing else.

Let's see if we can't improve upon this situation. Can we dramatize the past so that the history of a sport will command attention and have some value?

First of all, some criteria should be developed which will help in deciding what facts to select from the mass of available data. Five criteria are proposed herewith:

1. The facts should help the student better understand current rules and play of the game.
2. The facts should identify some of the significant people and organizations associated with the sport.
3. The facts should help the student see the relationship of the sport to the culture.
4. The facts should contribute to an appreciation of the growth and development of a sport.
5. The facts may be colorful or unusual events of interest in their own right.

The international game of soccer no doubt has a richer and more dramatic history than any other sport—a statement which Americans find difficult to accept. People in the United States do not comprehend the tremendous enthusiasm and excitement generated by soccer matches throughout the world. One example will illustrate the point The centennial celebration of the English Football Association occurred in 1963, and the occasion was marked by a special game between England's best eleven and a team of international stars from eleven countries. A full house of 100,000 people crammed Wembley Stadium, and millions more watched on television. The game was also broadcast by radio throughout the world by more than 500 announcers who spoke two dozen languages. Further evidence of the popularity of soccer is the fact that the largest stadium in the world for any sport is in Rio de Janeiro where a crowd of 199,854 attended a soccer match between Uruguay and Brazil in 1950.

In teaching soccer one aspect of the game is the throw-in from the sidelines when a ball goes out of bounds or into touch. This throw-in must be made with both hands on the ball and from behind the head with both feet on the ground. These restrictions on the throw-in came about in 1882 because a player by the name of William Gunn could throw a ball 80 yards with one hand and even scored goals. An interesting sidelight here is that the Sheffield Association in England permitted a kick-in from touch in the 1870's. The NCAA soccer rules allowed the kick-in from 1950 to 1963 so this actually was not a new idea as many people thought.

The original goals consisted at first of only two upright posts eight yards apart with no crossbar. Then a tape was strung before the crossbar was used to relieve the referee of some really tough decisions.

In over 100 years of league competition in Great Britain there has been only one direct fatality from soccer. A goalie, John Thomson, dived at the feet of a forward and was kicked in the head. He suffered a fractured skull and died that night. This is one reason why the British people and others wonder how the United States, a reputedly civilized nation, can tolerate 15 to 30 deaths *a year* from football. Please don't ask me to explain this tolerance!

Another incident gives some insight into the peculiar nature of soccer in other cultures. On March 9, 1946 Stoke City and Bolton played a cup tie game at Bolton. The stands were packed with 70,000 fans, and the game got under way. Then several hundred gate crashers stormed over the top and pressed down on the crowd below. Several thousand people were forced on the field, and the referee halted play to have police clear the ground. The game was resumed for a few minutes but stopped again by the police who said that two or three spectators had been killed. The teams went to the dressing room but then were asked by the chief constable to resume the game. Play started again with thousands of spectators on the field so that sawdust was used to mark off a slightly smaller area. At half time the teams did not leave the field but changed ends and continued. Not until sometime after the game was it learned that 33 people had been crushed to death and 500 injured.

There are many miscellaneous facts about soccer that beginning players will apprecate. For example, the highest score ever made in an English game was 26 to 0, and in a Scottish match, 36 to O. One player scored seven goals in a game, yet his team lost, 8 to 7. A Scottish team played a string of 63 matches without defeat. Finally, if goals seem difficult with the present off-side rule, think what is must have been like before 1925 when three defensive players (instead of two) had to be between the offensive forwards and the goal when the ball was last played.

Turning to other sports, students learning ice hockey usually have trouble with the rule of "icing the puck." However, the rule becomes more comprehensible if they understand its origin. Thirty years ago hockey was played with much more emphasis on defense. The two defensemen rarely crossed their own blue line except for a solo rush, and they never moved up to the point position on offense. Therefore, when a team got a goal ahead they would often go into a defensive shell and simply shoot the puck the length of the ice. The other team had to chase it back and then come up the ice with another attack. If they lost possession, the same thing happened again. This was often done for as much as the last ten or fifteen minutes of a game and hardly contributed to the enjoyment of the spectators. Out of this situation came the rule concerning "icing" whereby if a team shoots the puck from its own end and it crosses the opponent's extended goal line, play is stopped and a face-off called for at the special spot of the shooting team's defensive zone. However, the rule does not apply if a team is short-handed or if the shooting team gets to the puck first.

The game of tennis has had an interesting evolution in its rules. Here is a knotty problem described in *Lawn Tennis in America*, a book written in 1889 by Valentine G. Hall:

> If a player catches the ball on his racket, walks with it to the net, and reaching over drops it into court, he wins the stroke, unless the umpire decides that the ball came into contact with the racket more than once, in which case he loses the stroke. (This case has been greatly argued. Experts declare that the ball cannot be caught on the racket without some slight rebound, in which case there is more than one contact.)

In reading this problem today one must realize that tennis racket strings were much looser then than they are now, and the balls were softer. Such an occurrence with modern equipment would be impossible.

Another early tennis rule permitted the server to stand with one foot in front of the baseline and the other foot behind, although the latter foot did not have to be on the ground. According to one source, tennis could be played by two, four, or eight people. Have you tried tennis for eight lately?

Along with the original rules drawn up by Major Wingfield in *The Major's Game of Lawn Tennis* is a suggestion for tennis which, to my knowledge, has never been tried. It states, "In a hard frost the nets may be erected on the ice, and the players being equipped with skates, the Game assumes a new feature, and gives an opening for the exhibition of much grace and science." This sounds like real fun, especially if the players don't know how to skate!

The modern and popular game of softball originally had many names, one of which was playground ball. Probably the first statement of the rules was in 1908, and it contained two interesting variations. One was that the player at bat could run either to first base or third base and then continue in that same direction. To avoid utter confusion if a runner was on base, the next batter had to run in the same direction. A second variation provided an optional system for scoring. Instead of using runs one point was awarded for each base that a runner reached. It was hoped that his system wouold diminish ties, and it probably did although it apparently was never used very much. Perhaps it would have value in a physical education class where time permits playing only a few innings.

The development of basketball contains many fascinating aspects. Basketball today is obviously a contact support in spite of what the rules say. However, it is still tame compared to what it was like in the first decade of this century. On an out-of-bounds play the ball was awarded to the first player to touch it *after* it went out. This led to wild scrambles in the crowd, diving into apparatus around the gymnasium, or boosting a teammate up the balcony to beat the opponents going up the spiral stairway. Before the double dribble rule, a player could dribble, stop, and dribble again. This led defensive players to grab the ball, wrestle it away, and also to use tackling. The jumper could catch the ball on jump balls, and a player was only given one shot for any foul. This latter rule meant that a player going in for a lay-up shot risked annihilation. Finally in 1911 a player in the act of shooting was given two free throws if he missed the shot.

The open-end net on the basket was the result of a surprisingly slow evolution. Everyone knows about the peach baskets nailed to the running track for the first game. When a basket was made, someone, often a janitor, would have to climb a ladder and take the ball out. Then a hole was drilled in the bottom so that the ball could be punched out with a wand. One equipment manufacturing company made a metal rim with a closed net and a ring in the net at the bottom. A string ran from the ring and over a pulley under the rim so thhat an official could pull the cord and eject the ball from the net. An open net did not come into use for at least ten years following the first game.

One of the problems faced in girls basketball was the matter of admitting men as spectators. The Ohio State *Lantern*, a student newspaper, reported in an article on February 4, 1903 that the faculty of Buchtel College voted against open admission because they felt that "the bloomers were more of an attraction than the game itself." Another social problem was found in the account of a football game between Ohio State and West Virginia as described in the *Lantern* for October 15, 1902. Ohio State acquired a 15 to 0 lead in the first half. I cannot improve on the words of the unknown reporter who described subsequent events: "The whisky with which the Virginians braced themselves during the intermission showed its effects in their spirited playing for the first few minutes of the second half, but it soon wore off, and the slaughter commenced as before."

Volleyball rules as conceived by its inventor, William Morgan, were a combination of tennis and volleyball. A tennis net was used but raised so that the top of the net was six feet six inches above the floor. The serve had to go ten feet and could be helped over the net by a teammate. One unique feature was dribbling. A player could carry the ball by bouncing it on his hands. However, he could not dribble across a restraining line four feet from the net. The following hints for players were suggested:

1. Strike the ball with both hands.
2. Look for uncovered space on the opponent's court.
3. Pass to your teammates when possible. [There was no three-hit limit.]

Track and field competition is as old as mankind and Olympic competition—ancient and modern—has existed for well over 1200 years. Broad jumping was popular with the Greeks, but their jumpers carried in each hand a *halter* or weight of about four pounds each. An English scholar, Gardiner, reported that a jumper who could not ordinarily jump over 21 feet was able to make 29′ 7″ with weights and using a take-off board. It would be an interesting class project to try to verify this improvement.

The story of Olympic competition is one of fact and fiction. One example of fiction was the popular report that Adolph Hitler refused to shake hands with Olympic victor Jesse Owens in 1936. Bill Henry, in *An Approved History of the Olympic Games* has set the record straight by pointing out that after the first day Hitler did not publicly congratulate any winners, and Owens won his first championship on the third day. The only person who might have been slighted was Cornelius Johnson who captured the high jump late on the first day some time after Hitler had departed.

While I am on the subject of dispelling myths, may I solicit your help in laying another one to rest for all time? This is the persistent legend that Abner Doubleday invented baseball in Cooperstown, New York, in the summer of 1839—a story based on the report of the Spalding Commission in 1907 which claimed further that Doubleday gave the game its name, invented the diamond-shaped field, and wrote down the first rules of the game. The verdict of the Commission was widely acclaimed and almost unanimously accepted. However, the painstaking research of Robert Henderson has completely discredited the report of the Commission. Henderson in *Ball, Bat, and Bishop* has shown that the name *baseball* was in popular use before 1830, printed rules existed in 1834, and a diamond-shaped field appeared in a book published in 1810. Furthermore, Doubleday was not even in Cooperstown during the summer of 1839, or

1840 either, because he was a cadet at West Point. The evidence conclusively indicates that Doubleday had nothing to do with baseball except to play it and that baseball owes its origin to the English game of rounders.

The foregoing examples show some of the facts and information for several sports that might be incorporated into a history unit for a sport. I would also like to suggest the possibility of not presenting the historical background all in one block at the start of the activity. This information may have more pertinence and meaning if it is imparted at various appropriate times. As students learn something about a sport, then historical information assumes greater significance. It also contributes to better teaching by offering some variation and a change of pace. For example, the previously cited information on "icing the puck" in hockey would tie in naturally with a discussion of the rule at a later time. When demonstrating the throw-in for soccer, the instructor could point out the reasons for the special technique used. Other historical information could be presented in similar fashion or at some other time such as during a rest period.

Our profession possesses a rich and colorful heritage. I ask you to learn more about it for yourself and to utilize this knowledge toward the goal of a better and more effective education for your students.

Highlights in the History of Basketball

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Basketball is seventy-four years old, and unlike most sports, enjoys a birthday, or birthmonth. It was in December 1891, certainly before the Christmas holidays, that James Naismith invented basketball for a recalcitrant secretaries class at the YMCA Training School in Springfield, Massachusetts. An interesting photograph of the first basketball team shows their equipment to be long-sleeved jerseys, bell-bottomed trousers, wire mesh baskets, and what appears to be an outseam soccer ball.

Although the rules prohibited physical contact, basketball was a very rough game in its early years. The traditional football habits of running with the ball, blocking, and tackling, led Naismith to advise others to start the game with baseball, rather than football men. One can imagine the scramble that ensued when a ball bounced among the sidelined pieces of apparatus or into the overhead gallery or running track.

The original rules made no provision for a dribble, though a ball could be batted with either hand. That dribbling began shortly after the game was invented is witnessed in the September 1894 issue of *Physical Education* by the following account of a girls game, which differed not at all from men's basketball in the early years of the game: ". . . . a player found that by deftly bouncing the ball, she could get it to whatever place she pleased without giving any chance to her opponent to get it away from her. It was a fine play, in fact it was so appreciated by the whole team, that immediately after the game everybody began to bounce the ball."

Four years later the editor of the *Basket Ball Guide* wrote that the dribbling game had developed to such an extent that it over-shadowed the original purpose of the game. Rules makers, never happy with any type of dribble, had to contend with a two-handed dribble and an interrupted dribble before settling for a continuous motion dribble in 1915. In 1927 the rules makers astonished the basketball world by abolishing the dribble. The uproar that followed not only brought about the restoration of the dribble, but the formation of a national basketball coaches association as well.

The equipment of basketball sometimes developed in unusual ways. The backboard became necessary when overzealous spectators reached down from the running track to deflect a shot for the basket. Screens and other contrivances kept spectators from interfering and soon were used by the players for carom shots.

Punching bags, rugby footballs, and association (soccer) footballs were used in the early games. In 1894 the rules of basketball abruptly stated that the ball should be 30 to 32 inches in circumference, some 3 to 4 inches larger than the soccer ball. Naismith believed it was done by the manufacturers of the ball who saw an opportunity to increase their receipts by putting a new ball on the market. For several years the official rules stated that the ball and basket (also enlarged) made by A. G. Spalding & Bros. should be used. In 1903, games were declared void unless the Spalding ball and basket were used. Despite this apparent monopoly a certain amount of standardization was probably achieved. In the same year the same company advertised a new basketball shoe with a suction type sole to be used on slippery floors. Teams seemed equally divided in their choice of football pants or knee-length track shorts.

Players tossed for the goal in any way that seemed natural. By 1905, however, the two-hand underhand style had lost favor and was used mainly for free throwing. Most shots were of the two-hand push variety. Two-hand shots predominated until the 1930's when a speedier game encouraged one-hand shooting. The one hand jump shot became popular around 1950 and is the dominant shot in the present day game.

Team play in the early days meant that forwards did all the shooting, guards defended, and centers moved the ball between these two groups. By 1910, however, the center had both offensive and defensive duties. Soon many teams were employing a running guard–standing guard system, and by 1930 all men entered into both the offensive and defensive phases of play.

Man-to-man defense was the only type of defense employed for many years. Messer, in 1911, describes a "position" style of defense which is clearly the forerunner of the zone defenses. Meanwell introduced his famous pivot-and-short-pass offense to the Western Conference in 1911, and it was initiated throughout the country. Later teams utilized a pivot man type of offense which placed one player near the basket where he became the center of much of the passing and scoring activities. The creation of the stationary pivot man position proved to be a boon for the extremely tall player. The slow, delayed attack, often based upon well-practiced set plays, and occasionally of a "stalling" nature, gave way to a fast moving brand of basketball which allowed players considerably more freedom of movement in the scoring effort.

The YMCA revised and published the rules of basketball for the first few years. As the game developed the YMCA enlisted the aid of the Amateur Athletic Union and jointly published the rules. In 1905 a college group published a set of rules that encouraged a faster, rougher type of game and deleted all of the references to the AAU rules of registration and sanction. For a period of several years many sections of the country were confronted with at least two and sometimes several conflicting codes of basketball rules. In 1915 the YMCA, the AAU, and the Collegiate group formed a Joint Rules Committee and published a single code of rules for amateur basketball. From this point on, basketball, largely under collegiate leadership, became increasingly popular with both participants and spectators. In 1933 high school and Canadian organizations became affiliated with the rules body.

Basket ball took 20 years to become basketball; it needed 30 years to find a way to allow the ball to pass through the netting; and it permitted one player to shoot all of the free throws for 35 years. It has yet to standardize the size of its playing surface and is under constant criticism because of frequent rule changes, tall men, and incessant whistle-blowing. Despite these irregularities, it is fast becoming one of the most popular games on earth.

Theodore Roosevelt and the Founding of the National Collegiate Athletic Association

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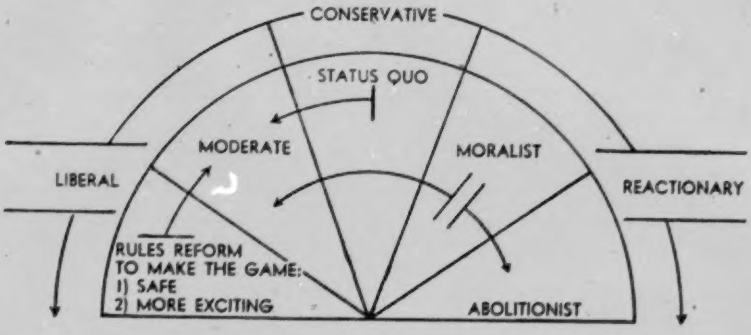
What to do about the football situation was the problem that faced educators in 1905. The controversy was a many-faceted affair and not a clear-cut struggle between the advocates of football and those in opposition to it. Neither did the issues that were extensively and intensively debated during the winter of 1905-06 suddenly appear as critical questions; rather, they were problems that had existed since the emergence and diffusion of the intercollegiate spectacle. But, from the 1890's until the year of the controversy, none of the factions seeking changes in the game were able to challenge the sport's existing authority.

It was during the 1905 season that opinion coalesced about five positions in sufficient quantity to make inevitable a confrontation between the factions. The factions were: (1) the status quo, which was defended by the rules body; (2) the liberal reform segment, consisting of those who wanted to unseat the existing committee so that they could adopt a playing code that would either make the game more exciting for the spectators or safer for participants; (3) the moderate stand, which was between the extreme liberal and the conservative positions, but closer to the latter; (4) the moralist faction, a group dedicated to the proposition that there should be a return to the standard of conduct that governed the athletes of an earlier age; and finally, (5) the extreme reactionary faction, those who felt that abuses, both in player and spectator conduct and the management of spectacles, and dangers inherent in the game were so great that the sport should be abolished. Thus, when superimposed upon a chart of political opinion, the attitudes of those involved in the controversy ranged from the liberal reformers on the far left, through the conservatives in the middle, to the reactionaries on the extreme right.

By 1905, the sole rules-making body was the Intercollegiate Football Rules Committee, an Association of representatives from Eastern institutions (with the exception of Chicago's Amos A. Stagg.) The power to regulate its own membership made it a self-perpetuating group and, therefore, a society that was accountable to no one for its action or lack of action. While the Rules Committee could not force outside insti-

Factions Involved in the Football Controversy



tutions to abide by the code it adopted—various members of the group repeatedly stated that they had no desire to legislate for others—the very nature of intercollegiate competition, especially intersectional contests, compelled the colleges to adhere to a common set of rules. For example, the desirability of a uniform playing code became perfectly clear to members of the Rules Committee in 1895 and to nonmembers in 1897. A dispute over momentum plays in 1895 forced a split in the membership of the Rules Committee and they adopted a dual code. The resulting situation was so unsatisfactory that they compromised their differences after one season of play. After repeated unsuccessful attempts to secure rules reform through the Rules Committee, institutions in the Middle West appointed their own rules committee in 1897. The code they drafted was never adopted because one of the teams had games scheduled with important Eastern teams.

The Committee's most powerful figure was Walter Camp, who, as secretary, directed its activities and virtually decided its membership. Camp, the father of American football, had formulated most of the games's rules and fostered its development. As patriarch, he was willing to entertain suggestions for change, but refused to adopt them unless he felt that the proposed alterations were in agreement with his concept of the game. In 1905, Camp and his fellow committeemen were satisfied with their game.

Until late in the 1905 season, those associated with Camp agreed that devotion to the game, rather than self-interest, motivated him. Although he was the person most responsible for the unequaled success of the Yale teams, no one questioned the position he assumed on the various problems that came before the Rules Committee. His image was one of a perfect gentleman; a man with such ethical standards that he could negotiate and legislate on matters in which Yale was involved without permitting personal considerations to affect his conduct.

In the early fall of 1905, while order and unity prevailed among members of the Rules Committee, there was outside opposition to the body in general and Camp in particular. Coaches in the Middle West had been attempting to secure changes in the rules that would make the contests more exciting; a game featuring long runs, spectacular plays, and more touchdowns. These professional coaches, those who derived their livelihood from the sport, felt that the open game they advocated would attract more spectators. In 1897, when the Rules Committee refused to adopt their suggestions, the Midwestern coaches threatened to formulate their own code. Although the revolt failed to materialize, they continued to exert pressure upon the Rules Committee. After years of charges and threats, Camp, in an effort to placate the dissenters, agreed to seat a representative from the Midwest on the Rules Committee, provided they select Amos A. Stagg of Chicago. In 1904, Stagg, a former Yale athlete, assumed the role of spokesman on the Committee for all those outside the select circle.

A second element in the rules reform faction consisted of those who championed "safe and sane" football. Crusaders for this cause had been outspoken since the early days of the sport but it was not until 1905 that events finally forced responsible leaders to seek ways to honor their demands.

Spokesmen for the reactionary groups, the moralists and abolitionists, were president Charles W. Eliot of Harvard and Edwin L. Godkin, editor of the *Nation* and the New York *Evening Post*. An abolitionist during the 1880's and '90's, Eliot became a moderate reactionary following his several unsuccessful attempts to ban the sport at Harvard. Due to the events of the 1905 season, he returned to his former stand on the sport. Godkin, a staunch critic of the game, never abandoned his campaign to end it. While he agreed with the moralists that the inculcation of wrong values resulted from the game, he also expressed concern for the health and safety of the players and the exposure of citizens to such barbaric displays. When the reform element, which promised the elimination of abuses, gained momentum, Godkin steadfastly clung to his belief that the only satisfactory answer was "Football Reform by Abolition."

The solution to the controversy came when the various factions, except the abolitionists, agreed to the moderate position. At first, the coalition only included representatives from those schools outside the Rules Committee, but many realized that effective reform could not be accomplished without the sanction of Camp's powerful group because the existence of dual codes would produce confusion and more division. The great need of the new national association was to gain recognition from the Rules Committee, a concession that Camp was not willing to make. Negotiations between the groups failed to resolve the differences until Roosevelt exercised his influence in behalf of the new body.

Roosevelt's participation in the controversy was not due to an interest in rules reform, as arguments for a more exciting or safer game were not concerns of the President. When he assisted the cause of the national association, he did so because he felt that the Camp-controlled Rules Committee had failed in its responsibility to provide impartial officials for the contests.

In September 1905, the President's only concern about football was that many players and coaches were employing deceitful practices in order to win games. He felt that football, when played fairly, contributed to the development of character because it was a rough sport. On one occasion he said that he had "a hearty contempt for him if he counts a broken arm or collarbone as a serious consequence when balanced against the chance of showing that he possesses hardihood, physical address, and courage."

In the interest of the moralist cause, Roosevelt invited the coaches and representatives from Harvard, Yale, and Princeton to the White House on October 9, 1905. His purpose was to "get them [the coaches] to come to a gentleman's agreement not to have mucker play." Camp drafted and made public the resolution adopted by those in attendance. The display of sincerity so pleased the President that he informed Camp "Now that the matter is in your hands I am more than content to abide by whatever you do."

Roosevelt's faith in Camp did not change until after the Yale-Harvard game when it was brought to his attention that Yale had employed brutality to win the contest. Although the Camp-appointed official explained that the blow which the Yale player employed to disable Harvard's star performer was legal because it was open-handed, the President refused to accept the explanation because the act violated the spirit of the rule. Roosevelt also noted that the profitable brutality probably gave Yale the game or, "it at least prevented all chance of Harvard winning."

While Roosevelt, Dashiell, and Camp debated the disputed play, chancellor Henry B. McCracken of New York University, disturbed by the large number of football deaths and serious injuries, called a meeting of representatives from Eastern institutions for the purpose of deciding on a united course of action in regard to the sport. They agreed to initiate a reform movement and invited representatives from all interested colleges to participate in a second conference. When the delegates assembled on December 28, they formed the Intercollegiate Athletic Association of the United States and appointed a rules committee. The question of whether or not to recognize the Rules Committee was a difficult one but, after an extended debate, the conferees decided that reform would be more effective if the two rules groups met in joint session, a proposition that failed to meet the approval of Camp.

Opposition to Camp's stand came from Harvard where the members of the Athletic Committee had decided that something must be done to end the reign of the Yale coach. Recognition of the fact that Camp had used his position on the Rules Committeee to gain advantages for the Yale teams was one thing—their specific concern was the control he exercised over the appointment of game officials—but it was quite another matter to find a satisfactory solution to the problem. The question before the Harvard Athletic Committee was whether to retain its membership in the Rules Committee—an act that was tantamount to an endorsement of Camp—or to affiliate with the new Intercollegiate Athletic Association, a course that would result in a loss of status unless other members of the Rules Committee joined the revolt. Harvard's coach turned to Roosevelt for assistance, and the President, who had already informed Camp that he would not approve of any plan that left the control of game officials with the Rules Committee, assured him that he would exert his influence in behalf of a joint committee.

Two interacting factors made it possible for the President to secure the Harvard desired merger of the rules groups. West Point had been denied membership on the Rules Committee, while Annapolis was a participant in the activities of the body; therefore, leaders at the millitary academy were anxious to have a voice in the control of football which was at least equal to that of Navy. Secondly, Navy's representative on the Rules Committee had been the referee in the disputed Yale-Harvard game. Roosevelt's condemnation of his conduct virtually obligated him to demonstrate to the President that he genuinely wished to secure impartial officials for the contests. The President took advantage of the situation and insisted that the Navy representative support the proposed merger.

On January 12, 1906, the two rules committees held independent sessions at the Hotel Netherland in New York. The Harvard coach, on instruction from his athletic committee, left the meeting of the Rules Committee and joined the group representing the Intercollegiate Association. An exchange of notes brought the two groups into agreement for a joint session in which a member of the Rules Committee served as chairman and the Harvard coach assumed the duties of secretary. The move gave Harvard the position in the joint session which Camp had used to exert his powerful influence over the activities of the Rules Committee. Resentment of Harvard's action was best expressed by Yale's president, Arthur Hadley. "It looks to me," he wrote to Camp, "as though Reid [Harvard's coach] were not playing fair. . . . We treated Harvard courteously in the December meetings, and they have tried to take advantage of it. This ought to be a lesson to us for the future."

Amalgamation produced a more representative rules group but it did not bring an immediate end to Eastern control. Although the Intercollegiate Association succeeded only in gaining a representation on the joint committee that was equal to that of the

Rules Committee, the new arrangement was far more equitable than the former one. "The close corporation policy of the old committee," one observer wrote, "has long been like a red rag before the Western universities who had but one representative on the committee, and until two years ago none at all." The rules committee of the Intercollegiate Association (it became the National Collegiate Athletic Association in 1910) and the Rules Committee continued the policy of a joint session for the purpose of drafting rules until Yale joined the national body in 1915.

The Intercollegiate Athletic Association of the United States became the positive force in the development of intercollegiate sport. On March 31, 1906, the members adopted a constitution and by-laws and although the Association possessed neither legislative nor executive functions, its crusade for faculty control of the program at each institution "lent force to the rallying-cry that athletics are 'educational.'" The immediate effectiveness of the Association's crusade for the acceptance of intercollegiate sports as an educational experience and its rules reform plan was due largely to Roosevelt. When he forced Camp and the reluctant members of the Rules Committee to recognize the new body, the Association gained the status it needed.

Nationalism in American Physical Education (1880—1920)[1]

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The nineteenth century was a period during which the United States went through several stages in the development of its nationalism. The first half of the century was characterized by the growth of both national and sectional feelings in this country. However, the ties with the "old world" remained strong during this period. Following the Civil War, our nation set about to re-establish itself on a firm national basis. By the end of the century, this nationalism had been extended to a type of internationalism, in which the United States sought to exert its influence upon other nations through its newly formed institutions.

This process of development was not restricted to political institutions. Other forces were at work developing our economic, religious, social, and educational institutions along a similar course. The changes in these areas did not always occur at the same time or at the same rate, but the interacting of these major historical forces was always evident.

In light of our nineteenth century historical development, it is not surprising that many of the roots of our present-day programs of physical education are to be found in the closing years of that century. This was another manifestation on the part of the nation to cement its national unity by making our institutions more distinctly American in nature. This was stated in 1881 as follows: "The first use we should make of our regained liberty is, therefore, the re-establishment of those institutions to whose influence the happiest nations of antiquity owed their energy and their physical prowess, their martial and moral heroism, their fortitude in adversity."

Before considering the relationship between nationalism and physical education, it will be necessary to clarify what is meant by the terms "nationalism" and "physical education" in this context. It is evident that the term "nationalism" could lead to varied forms of inquiry due to its abstract nature. However, it will be used here to include those composite unifying forces of a nation, as compared to sectionalism and internationalism. Physical education would not be classified as an abstract term, but it is frequently misunderstood as to its content and scope. In our consideration here, it should be understood to include all those motor activities which are carried out predominately for education of and through the human body.

Viewing physical education and nationalism in these contexts, it appears that the years 1880-1920, roughly speaking, were somewhat of a watershed in the history of physical education in the United States. For it was during this period that many of the international and sectional ideas on physical education were considered, modified, and merged into programs which make up our present-day bases of physical education.

The earlier history of physical education in this country was characterized by slow and sporadic development. Quite naturally, the earliest interest was largely in physical training of a military nature. However, Benjamin Franklin, possibly influenced in this respect by his contact with the royal courts of Europe, was one who envisioned a broader scope of physical education. Interest in physical education arose from several sources during the first eight years of the century, but the evidence seems to indicate that little progress was made on a national level:

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[1] Bibliography may be obtained from the author upon request.

> In 1825 Professor Beck opened, in Northampton, Massachusetts, the first American school where gymnastics formed a branch of the regular curriculum. He has followers, but, considering our progress in other directions, his wheat cannot be said to have fallen on a fertile soil. Taking Massachusetts, Ohio, and North Carolina as representative States of their respective sections; it seems that at present (1881) an average of three in every thousand North American schools pays any attention to physical education.

However, during the interim, there were periods in which physical education flourished on a sectional basis. An outstanding example was the wave of enthusiasm which accompanied the first introduction of the German Turnverein in this country at Cincinnati in 1848. Others followed rapidly in the North, mostly in the North-Central area. Members of the Turnverein were also active in support of the Union during the Civil War. But the Civil War years again, quite naturally, saw the popularity of gymnastics decline in favor of military drill. The situation noted above, as of 1891, can partly be accounted for by the lack of interest in physical education following the war:

> After the close of the war the ardor for military exercises naturally declined very perceptibly. Then, since the military exercises had in a great measure supplanted those of the gymnasium, there came a period of comparative quiet in both these lines of physical training. This did not follow immediately after the cessation of hostilities, for such a movement once underway rarely collapses suddenly; but before ten years had passed popular interest was at a low ebb; then, after a time, it began to rise slowly and gradually, but surely.

The earlier editions of *Mind and Body*, a national physical training journal first published in 1894, were much concerned about replacing military drill with a gymnastic system. In particular, the first managing editor, Hans Ballin, was a strong advocate of the German system of gymnastics. Following is an example of attitudes he expressed in some of his editorials:

> Militarism is concluded in this issue. A persual of the answers to our inquiries will convince that there is a majority of teachers opposed to military drill, and an overwhelming majority prefers a graded system of physical training to military drill. It can also be observed that in cities and schools where German physical training is in use, the educators are strongly in favor of it, and opposed to the drill, while on the other hand, in schools where Swedish physical training is "claimed" to be in vogue, a sentiment for military drill is predominant, as in Boston.

In using the expression "graded system of physical training," Ballin was referring to a standard system of progressive exercise through gymnastic movements. The whole matter of gymnastic systems was one of the most pertinent issues of the time for physical educators. In fact, the Physical Training Conference held at Boston in November 1889 was assembled largely for the purpose of discussing the various systems. The Swedish system of gymnastics had been recently introduced into the country and its proponents were striving to compete with adherents of the revised German system for leadership. There was also the system introduced by Sargent at Hemenway Gymnasium of Harvard and various other "eclectic" systems. However, there was a great amount of disagreement as to whether there was or should be something which could be called an "American system."

Anderson of the Brooklyn School for Physical Training indicated that there was some form of an American system, which he would not change: "The so-called

American system is as scientific as that of Ling. . . . We begin where he stopped. . . . I have much respect for the German and Swedish systems . . . but taken as they are they will not suit the American people." Hitchcock of Amherst College was not entirely in agreement with the former: "The gentlemen have spoken of American methods. I have been working at physical culture for quarter of a century. . . . I do not, however, think that we have a system." Channing was one who expressed the viewpoint that there was too much discussion about systems: "I suppose we are all laboring for the same end, yet we have too much to say about *systems*. Who, I may ask, can lay claim to any special system?"

One of the leading spokesmen for those actively engaged in physical training was E. M. Hartwell. His opinions seem to be representative of those at the conference who felt that a change towards a more unified system of physical training was necessary in the United States:

> It is not within the scope of this paper to set forth the lesson to be learned from the best European system of physical training, or to show how fragmentary and defective our so-called American systems have been and are; but I remark in passing that a careful study of the German and Swedish systems of school gymnastics will be found an indispensable preliminary step for those who propose to organize a natural, rational, safe, and effective system of American physical education.

Writers of physical education history seem to be quite in agreement that the Boston Conference of 1889 was a landmark in the history of American physical education. Its participants included many of the leaders in the gymnastic world and many of the most prominent figures in American education. An interesting result of the conference is noted in the action taken by the Boston School Committee on June 24, 1890 when it ordered the introduction of the Swedish system of gymnastics in all the public schools of that city and appointed Hartwell as the director of physical training in Boston.

It appears that a number of other cities in the East followed the Boston example, while the Germans strengthened their position in the Midwest. Thus, sectionalism was still a dominant force in our physical education. However, it would seem that the real significance of the Boston Conference is to be found in indications that there would be more changes in the future, which would alter the course of physical education in the United States. For one thing, the papers and discussions had not been limited only to the area of gymnastics. Reference was made to athletics, and here possibly was the key to what the future would bring.

Rivalry among the various gymnastic systems continued throughout the 1890's with *Mind and Body* acting as the spokesman for the German system. A representative viewpoint of the time for that periodical is found in the August 1897 issue:

> While I think that all advocates of thoroughgoing physical education ought to unite in a solid phalanx to win the great mass for their common cause, and that they should leave to time and to experience the decision whether any of the present systems shall gain predominance by assimilating from others, or whether at some future congress of physical educators the various systems shall be merged into one, an American system adapted to our national educational requirements,—I frankly say that upon the whole the German system, gradually developed and still developing by the thought and practical work of thousands of eminent pedagogies, surgeons, and other men of science of the highest standing in collaboration with the foremost physical educators, seems to be destined to form the substantial framework for the future, eclectic physical curriculum for the American school system.

Similar arguments were being presented by those advocating other systems. However, most seemed to be in agreement that some form of an eclectic system would be evolved. This was essentially the conclusion reached by James Boykin in the article written for the U.S. Commissioner of Education Report for the year 1891-1892:

> Furthermore each wave of popular interest which the history of physical training disclosed has left its impress upon the general character of physical training as it is today, and has contributed to make what will be at some future time the American system of physical training. Such a consummation has not yet been reached, or the German system, the Swedish system, and the Delsarte system, would not enjoy such high favor; but there can be no doubt that in its final development the American system will be a composite not of these three, as the "combination systems" of today generally claim to be, but of all combined American experience in the field of physical training. The progress of the evolution toward an American system even in the last few years, may be distinctly seen, especially in school gymnastics; for have not the Germans begun to adopt the Swedish ideas of the day's orders and systematic progression, and have not the Swedes aimed to make their gymnastics more attractive, even going so far in one case as to use the German bars, and in another to advocate the use of a combination of systems for older pupils; and have not the professed followers of Delsarte adopted exercises that are plainly muscle makers as well as grace givers? And do not they all utilize much that comes from the old English sports, from calisthenics, from Dio Lewis, and from Sargent? And is not all this found side by side and in harmony with military institutes after the plan of Colonel Partridge, manual labor and manual training schools after the manner of Dr. Cornelius and military drill in high schools after the war-time ideas? And finally, there is reason to believe that until this composition of forces, this amalgamation of system does take place, so that a well-defined and well-established American system is produced, physical training will never rest upon a safe basis in this country.

There is evidence, however, that supporters of specific systems were not ready to agree with Boykin. A rebuttal to this article was presented by Ballin in the March 1896 edition of *Mind and Body*, in which he pointed out that he saw little evidence of the trends referred to by Boykin. Ballin added that Americans were not prepared to make a decision in this matter because they had given neither the German nor the Swedish system of physical training a fair test; they had not yet accepted physical training as a necessary practice.

In spite of this apparent disagreement as to the status of physical education, as viewed by leaders in the 1890's, a trend toward more centralization can be noted. The establishment of the American Association for the Advancement of Physical Education in 1885 was an evidence of this change. But it must be stressed that the change was definitely not one which would establish a fixed system for the United States; rather, it was more of a recognition of a national need and a national basis for physical education.

. Again, it must be emphasized that this changing outlook was entirely in keeping with changes that were taking place in other areas in the lives of the American people. In the economic sphere, the doctrine of laissez-faire capitalism was being challenged. This meant that rugged individualism was losing ground to cooperative enterprises that would eventually be extended to the national level. Politically, with our western frontier closed, we found a new bond as a nation in looking for new frontiers where the American way of life could be spread. Socially, we were recognizing that the economic and political changes were creating certain national problems that were not present before. For example, the industrial revolution was resulting in a population shift from rural to urban areas. The requirements for physical labor in this urban industrial life were found to be quite different from the heavy physical labor of the farm. Some people saw that new forms of physical activity for leisure time would be required to meet the needs of this rapidly expanding urban population. At the same time, the shifting population had the effect of promoting cooperation among divergent groups by bringing them into proximity where more organization was both natural and essential. Thus, the social individualism of the frontier was also rapidly being altered.

It was in such an economic, political, and social setting that the roots of our current programs of physical education can be found. The nation was experimenting with a new nationalism and a new conception of democracy. Within such a framework, a philosophy of physical education was developing which was to be distinctly American, although influences of the European background would always be evident.

The foregoing provides the key to the central problem of this paper: Has nationalism been the dominant force in the American philosophy of physical education? We notice that the nineteenth century was characterized by sectional interests and struggles among systems in physical education. This would not seem to be true today. What was the turning point? We have already advanced the thesis that the answer to this question is to be found in events which took place between 1880 and 1920. But, what were these significant events, and why did they occur?

An answer to these questions is to be found in the steadily increasing interest in sports among the American people. The popularity of athletic contests was evident long before 1880. However, the earliest interest was developed through athletic clubs and intercollegiate athletics. The mass of the people did not receive the educational benefits to be derived from such activity. Doerflinger incidentally alluded to this fact in his article for *Mind and Body* while advocating an acceptance of the German gymnastic system:

> Athletic associations of all kinds have done a great deal to counteract the degenerative tendencies alluded to before. But their adherents form only a small fraction of the whole people. The great mass of the 70,000,000 inhabitants derive no benefits from them. National physical improvement can be accomplished only through institutions that reach practically the whole people. In my estimation there is but one practical way to attain this: the introduction of physical education in the people's schools . . .

Doerflinger was to be proven correct as to the means for gaining wider acceptance of physical education, but the emphasis in the physical education program did not take the form that he would have preferred. There is evidence that the English games exerted greater influence in the United States than any other elements of physical education from foreign countries:

> The Honorable Edward Littleton, an authority in English higher education, has written a notable article in the "nineteenth century" on "Athletics in Public Schools." He canvasses the system with some thoroughness, and arrives at independent conclusions regarding it, which will be of special interest on this side of the Atlantic, now that such vigorous efforts are being made to adopt the same policy in our higher schools.

Hartwell, a strong supporter of gymnastics, also made reference to the growing popularity of athletics on more than one occasion. In his concluding remarks at the Boston Physical Training Conference he stated: "We have at least established a *department* of athletics, if not a system. We have an inherited taste for out-of-door games that is not going to be squelched." This was confirmed in a later article found in the Report of the Commissioner of Education for the Year 1903: "On the whole, the advancement of physical education in America has been greater in the past twenty-five years than in any other period of its history. Obviously the most striking and rapid expansion has been in the department of athletics."

This trend reached a climax following World War I as a result of facts brought out during the conflict:

> Thirty-five per cent of the men in the first draft were rejected as physically unfit . . . . Only a minority of the men when they arrived at camp were possessed of the strength, endurance, agility, muscular control, and disciplined initiative necessary for the rigors of immediate intensive military training. This minority was made up largely of men who have had thorough and varied athletic experience under competent direction.

By 1920, it was evident that the United States had evolved a program of physical education which was characterized by informality and emphasis upon national sports. Such a program was entirely natural in view of our changing educational and political philosophies. Educationally, there was a growing recognition that a sound program of education must be based upon the needs of the child. This was also being recognized in physical education: "We are rapidly coming to a system of physical education for the public schools, which will be based upon the *play activities* of childhood." Politically, we were moving in the direction of more national government control while retaining state and local autonomy in some important areas. A parallel can be seen in physical education where we adhered to a national sports setting while retaining great divergence among local programs.

Such a program is entirely consistent with our concept of democracy, but at the same time it represents an interesting paradox found in the history of American democracy. Our institutions have moved in the direction of increased nationalism, while, at the same time, we have broadened the base of participation and retained individual freedom. For physical education, the years 1880-1920 were particularly significant in establishing its position as a representative institution of our democracy.

Teacher Education

The Ohio Conference on Certification

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There are many approaches to the improvement of the preparation of teachers of health and physical education. State standards of certification which graduates of colleges and universities must meet in order to teach are one. Logically an improvement in the standards will be reflected in the curriculums of the institutions that want their graduates certificated. Such standards are minimal, however, since they must apply to every type and size of college and university. As one would expect in actual practice, some institutions exceed the requirements dictated by the state, while others just meet the minimum or try to circumvent the standards. Nevertheless, an improvement in standards will usually result in a corresponding improvement in teacher preparation and an improvement in the physical education programs in the schools that employ the certified teachers.

The study and development of such standards may be initiated and conducted by the official agency, the state department of education, or voluntary professional groups may not wait for the state to provide leadership in these matters. Conferences, workshops, committees, and institutes can devise recommendations for submission to the state department for consideration. In many instances the official agency will welcome properly conceived proposals for change which reflect current needs and knowledge. After all, no state department wants to impose outdated and ineffective legislation. The Ohio Conference on Certification was an effort by a voluntary group to provide leadership and to assist its overburdened state department in developing new and more effective standards. This report describes one technique for change which may be appropriate for other groups and organizations in other states.

In Ohio we have an informal organization of men in college physical education known as the Ohio College Directors. It's so informal its name doesn't specify what, if anything, the directors direct. It has no constitution, no officers, no dues, no agenda, and no minutes. Some twenty-five years ago a small group of men decided to meet, have dinner, and discuss common problems. Delbert Oberteuffer, Ohio State University; George Gauthier, Ohio Wesleyan; Walter Livingston, Denison University; and George Ryder, Miami University were among them. Annual meetings have been held each fall on the Ohio State University campus at the invitation of the unofficial host, Delbert Oberteuffer. And so, faculty members of those institutions providing programs of preparation for teachers of health and physical education met to exchange ideas and to keep abreast of developments in the state. The discussions have never been restricted to teacher preparation but have included all facets of broad programs of health and physical education in higher education, including intercollegiate athletics.

In the post World War II years, topics of informal discussion centered on the enrollment explosion, physical fitness, new facilities, required physical education, and the like. With the advent of sputnik and the space-age in the fifties, discussion included concern for the encroachment of increased general education requirements on the professional curriculums. A dilemma became obvious: how could professional preparation in the comprehensive field of health and physical education incorporate new knowledge or emphases and at the same time require certification in a minor plus substantial increases in the basic or liberal education requirements? How could all of this be packed into the four-year baccalaureate degree program? Perhaps certification standards and curriculums developed to meet the needs of the 1920's were no longer effective.

During this same era the Ohio College Directors were caught up in the general spirit permeating the country of improving the quality and quantity of education. Consequently in 1957 a special meeting was held to discuss those problems in teacher education. At this meeting an informal committee was formed to study the problems and to propose courses of action. At last there was to be more than talk!

The committee reported at the next annual meeting, and in light of its recommendations was charged by the Ohio College Directors to examine the state certification standards. City directors and a number of women from college preparing teachers in health and physical education were added to the committee to secure greater representation in the state. This voluntary group developed some proposals which were submitted to the Ohio State Department of Education, and in so doing set the stage for the future. As a result, the Department encouraged the group to continue its work and to submit its recommendations for consideration.

In 1965 a statewide conference on certification standards was proposed to the Ohio High School Athletic Association and the Ohio Association for Health, Physical Education, and Recreation. These organizations agreed to underwrite the costs of the proposed conference. Here was really more than talk. The OAHPER had at long last done something other than plan an annual convention. Ruth Helsel, Wittenberg University, the president of OAHPER at that time, and Paul Landis, commissioner of the OHSAA, appointed a conference steering committee to design the conference and to develop a list of invitees. Finances, as usual, were a limiting factor; nevertheless, it was decided to secure as thorough a representation of the state as possible. An examination of the lists of participants will show representatives of:

Ohio State Department of Education
Ohio Association for Health, Physical Education, and Recreation
Ohio High School Athletic Association
Ohio Association of Secondary School Principals
Ohio Association of Elementary Principals
Ohio Association of School Administrators
Ohio Association of County Superintendents
City Directors and Supervisors of Physical Education
Ohio Association for Higher Education
Ohio Basketball Coaches Association
Ohio Football Coaches Association
Ohio Track Coaches Association
State supported universities
Private colleges and universities
Parochial schools and universities
Municipal universities
Classroom teachers of health
Teachers of physical education

The conferees were placed in work-study groups to consider assigned problems and issues. Prior to the small group study consultants presented background and authoritative information to serve as a frame of reference for the discussions. In addition a packet of selected study materials had been presented to each conferee prior to his arrival at the conference. In this way the work-study groups had some preparation for their tasks and did not have to approach each issue as if it were a new topic. The work-study groups then reported the results of their deliberations and their conclusions to the general conference. The total conference membership then considered the reports for modification, disapproval, or approval. In this way the recommendations became a consensus of the entire conference and consequently carried the support of the total group. As would be expected in such a procedure some individuals disagreed or were disappointed with the final conclusions of the conference.

One of the most important and far-reaching recommendations was for the discontinuance of the comprehensive or joint certification standards for health and physical education. Since 1927 the only *programs of preparation available for* certification in either physical education or health education were required by law to include both fields. The health educators were more sensitive to the explosion of knowledge and to the demands for excellence. They were successful in getting the State Department of Education to enact two new certification standards, a 24 semester-hour minor and a 36 semester-hour major in health as a separate and distinct field from physical education. These new standards became effective in 1948; now this conference recommended the same opportunity for improved preparation and standards for physical education.

The conference declared interscholastic athletics to be a part of the broad program of physical education in the schools; the so-called separation of physical education and interscholastic sports was an administrative procedure and not one of separation in philosophy or purpose. Schools in Ohio need but one or two full-time teachers of physical education for boys. The same schools will employ six to twelve additional men as coaches of interscholastic sports. These men must necessarily teach in areas other than physical education in the schools. Men so employed need major preparation in their teaching field and special preparation for the coaching of interscholastic sports to be most effective in their total jobs in the schools. A 20 semester-hour certification standard was recommended for the coach of interscholastic sports as well as certification of the 24 and 45 semester-hour standards in physical education to coach interscholastic sports.

In summary of the recommendations of the conference, the following includes the less controversial ones:

- Certification standards for coaches should be administered by the State Department of Education and not by the Ohio High School Athletic Association.

- Temporary exceptions to the certificate for coaching should be made for teachers coaching tennis, golf, swimming, cross-country, and gymnastics, if the enforcement of the new law would make it necessary to discontinue any of these sports because of a lack of certified personnel.

- In the major teaching field for either health education or for physical education the student should have a comprehensive background and have had the opportunity to concentrate on elementary or secondary level.

- To be certificated in physical education, K-12, a teacher must have had student teaching experiences on both the elementary and secondary level.

- The Ohio Department of Education, Division of Teacher Education and Certification, should require a three semester-hour course in physical education and one in health education of all elementary school classroom teachers.

The work-study groups and the conference discussed the competencies needed by teachers of health, teachers of physical education, and coaches of interscholastic sports and considered writing the proposed certification standards in these terms. It was decided, however, to maintain the format and terminology now acceptable to the state Department of Education. While these standards do not appear as a "bold new look" they would not hamper the conference in incorporating its major recommendations; nor would they hamper the colleges and universities from modifying their professional curriculums. As recommended, the State of Ohio would have the following certification standards in these fields:

Teaching certificate in coaching interscholastic sports	20 hrs.
Teaching certificate (7-12) physical education	24 hrs.
Teaching certificate (7-12) health education	24 hrs.
Special certificate (K-12) physical education	45 hrs.
Special certificate (K-12) health education	36 hrs.

The above recommendations are not earth-shaking to the profession; but they are real accomplishments for Ohio. Precedent established by official action some 38 years ago has been broken and, most encouraging of all, the recommendations are being considered fully by the state Department of Education. The report of the Green Meadows Conference as submitted to the state is available on request. If it can be of value in method or content to others, the success of the Conference will have been furthered.

Recent Trends in Certification of Men Physical Education Teachers and Coaches[1]

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To look into the future in our increasingly complex and rapidly moving world and to foretell what will happen requires a gift of prophecy far beyond that which most of us possess. To try to organize, analyze, and make meaning out of what is occurring in our educational realm is also a difficult task and one that is fraught with uncertainty. Even to review current opinions and to summarize trends in our own field with any degree of validity and accuracy is not easy in these times.

For we are caught up in an educational world in which society is becoming more and more demanding, communities are being increasingly involved, and government subsidies and support are causing the administration of the huge educational enterprise to become extremely complex. At the same time the battle for the curricular minute goes on unabated, pedagogy is having difficulty maintaining academic respectability, the search for new knowledge is in many places considered far more important than the implantation and application of the old, and courses dealing with the acquisition of skills and even the growth and development of people are sometimes relegated to secondary positions.

And yet it is in this kind of a world that the developing of leadership and the preparation of teachers becomes more vital and important than ever before. It is in circumstances such as these that teachers must be prepared who are more adaptable, more courageous, more enduring, and more knowledgeable than was previously necessary. It is in the world today that health, physical education, and recreation have more to offer than at any time in the past.

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[1] Bibliography may be obtained from the author upon request.

It is in this setting, then, that we are going to try to examine one of the important aspects of teacher preparation in our field, that of certification. For it has been shown that the procedures, regulations, and policies that are established by our state departments of education that govern the eligibility of teachers to work in a given community have a far-reaching effect on programs of professional preparation.

In a country as vast as ours, where certification is in general governed by the states and where geography and climate alone eliminate the possibility of standardized programs, it is difficult to discern national trends. It seems preferable, therefore, to start by listing forces which are acting on those formulating certification procedures and by indicating problems which are affecting their establishment.

One development which is having a great influence in our field today is the trend toward the expansion of the interscholastic sports program. Whereas only a few short years ago most schools felt satisfied with from three to six sports, the tendency today is to strive for from six to fifteen, depending upon the size of the school and the facilities available. Not only is the number of sports increasing but also the number of teams in each sport. It is not unusual, in the more popular sports, to find sophomore, junior-varsity, and varsity teams. In addition to more sports and more teams in each sport, more coaches for each team now appear to be necessary. The net result, then, is a great increase in the number of coaches in each school system. This, in turn, makes for an imbalance between the number of coaches required and the number of physical education teachers needed, something which has a great influence on administrators, school boards, and state officials.

A second factor having a bearing on certification regulations is the concern for the safety and health of participants. Few parents want, and few administrators are willing to risk, situations in gymnastics, football, hockey, or swimming where students are practicing under anything but expert supervision and where persons highly qualified in first aid and care of injuries are not immediately available. Opinions with respect to this vary considerably when it comes to the less hazardous sports.

The educational philosophy of the various parties involved in decisions also is a factor. The difficulty here is that there is not enough unanimity of opinion. And yet it appears that the majority feel that when an activity is part of the educational enterprise and when development occurs through a medium of such activity, this constitutes education. Interschool athletics, therefore, is physical education and the two cannot and should not be separated. For this reason many feel that all coaches should be physical education majors and that separate certification of coaches will lead to a dichotomy which is in contradiction to their educational philosophy.

In many institutions, notably the private academies, administrators have indicated the desirability of coaches being in the academic classroom. This, they claim, improves the image of the coach and also makes his influence on the character of the students even greater. Other school officials have indicated that the coach who also teaches academic subjects understands and appreciates more fully the total school operation and the educational philosophy of the institution.

James B. Conant, on the other hand, argues strongly against physical education teachers also teaching academic subjects and states that they should work with intramurals and should coach. He states that they are not adequately prepared to teach mathematics and similar academic subjects and should not be asked to do so. There are many school administrators who agree with this point of view. Some point out, however, that coaches do not do a good job teaching physical education because they are so engrossed with their coaching duties that they have little time, energy, or enthusiasm left for physical education.

One of the best known articles dealing with this problem is the one which Charles Bucher wrote for the September 1957 *Journal of Health, Physical Education, Recreation.* He emphasized the impact of a coach on the lives of young people and the importance of coming to grips with this whole matter of keeping the right kind of persons with the right kind of professional preparation in the coaching positions. He reviewed the survey conducted by Everett Hebel in which questionnaires were sent to the executive directors of the state high school athletic associations. From 43 responses it was found that almost all states required their coaches to be certified as teachers, that eight states required some work in physical education and health, and that five states had no stipulation whatsoever.

Bucher stated that from personal observation and a review of the literature he found agreement on four essential qualifications of a coach. These are:

- Expert knowledge of the game
- Understanding of the participant—physically, mentally, socially, and emotionally
- Skill in the art of teaching (knowing how to get across the fundamentals and skills of the game)
- Desirable character and personality traits.

Dudley Degroot in his December, 1950 *Journal of Health, Physical Education, and Recreation* article "Have We Ignored Coaching as a Profession?" commented on the growth of athletics and of physical education and then made a plea for treating the two separately and for providing separate professional preparation programs leading to the teaching of physical education and coaching. He emphasized the fact that coaches who also have the responsibility for teaching physical education do not do a good job in this area. He indicated that coaches should be specialists in their areas and that the profession has failed to give them the kind of preparation they should have.

Maetozo, in a recent study, sent a six-page set of questions to 200 coaches in each of the following sports: football, basketball, baseball, track and field, and tennis. Coaches in all 50 states were questioned and communities of various sizes systematically included. His findings indicated that coaches are assigned to instruct in a variety of subjects, regardless of their major, that there are almost twice as many physical education majors coaching as majors in any other subject, that only a few of those majoring in other subjects have a minor in physical education; and that there are now in use very few, if any, written statements of qualifications of coaches. He found further that most coaches have responsibilities in more than one sport, and that few of them work with intramurals. Coaches advocated more training in squad management and organization, more technical information in the sport, better preparation in training and conditioning, more knowledge of legal implications, better training in officiating, and more discussion of the relationships of the coach to the physician.

The opinions of the city and state directors, principals and executive-secretaries of state associations were also sought. Except for the high school principals this group was predominantly in favor of certification for coaches. They were opposed in general to certification for specific sports. Except for the principals, who were about evenly divided in this question, they were in favor of special professional preparation for assistant coaches as well. This group was evenly divided on the question of whether the head coach should have a physical education major. Again, the principals tended to oppose this more than the others. All were much more favorable toward a physical education minor for all coaches. The majority agreed that competencies beyond standard teacher certification are necessary.

Professional Preparation Conferences have also affected certification practices. The Jackson's Mill Conference, the Pere Marquette Conference, the Washington Conference of 1962, and the various state meetings such as those in New York, Minnesota, Texas, and Ohio have all had a significant bearing on subsequent certification. Such conferences tend to solidify thinking, to standardize practices, and to have an influence on both teacher preparation institutions and on state certification agencies. In most of these conferences recommendations have been made to increase certification requirements and also establish minimum essentials for coaching.

The National Federation of State High School Activities Associations and several of the state coaches associations have also tackled the problem of special certification for coaches. They too generally conclude that some special preparation is necessary if our coaches are to be the best we can produce. There is little unanimity, however, with regard to means of accomplishing this.

In general most of those involved with athletics agree that professional preparation programs should provide for the development of the following special competencies over and above those required for standard teacher certification:

1. An understanding of the relationship of the interscholastic athletic program and the particular sport they are coaching to the total education program.
2. A knowledge of first aid and the safety practices and techniques pertinent to the sport they are coaching.
3. An understanding of the possibilities of legal liability as well as sound practices and preventive measures.
4. A thorough knowledge and understanding of the biological, social, moral, emotional and spiritual values which may accrue from the activity and the best methods of bringing about these desirable outcomes.
5. A knowledge of the most accepted principles of growth and development and their implications for the sport.
6. An understanding of the best methods of developing and conditioning members of athletic squads.
7. A knowledge of the basic principles in the care and prevention of injuries together with an understanding of the proper relationship of the coach to the school or team physician.
8. The ability to speak in public so as to bring credit to the profession and the school and so as to more effectively inform the public of the educational possibilities of his sport.
9. An understanding of the basic psychological principles of motivation, stress, play, emotion, and group interaction.
10. A thorough knowledge of the fundamentals, offenses, defenses, strategies, and teaching methods involved in the particular sport. Included will be squad organization, coaching techniques, and sound motivational procedures.
11. A knowledge of and a sense of responsibility for local, state, and national rules and regulations.

While there is general agreement that these competencies are desirable there is a wide divergence of opinions as to whether all coaches should be physical education majors and as to whether all professional preparation programs in physical education should provide subjects to develop these competencies. Some believe these result automatically through participation in athletic programs while others think they can only be acquired by experience. Then there are also those who feel that while these competencies are important, others are more so.

Proposals with regard to certification for coaching are many and varied. In general, however, they may be categorized as follows:

1. An individual coaching any sport in secondary schools shall be certified for that particular sport. In case he is coaching more than one sport, he shall be certified for each.
2. Every person coaching should have a physical education major and his certification shall so indicate. This certification shall entitle him to coach any and all sports.
3. Head coaches of sports shall be certified in that sport. Assistant coaches do not need such certification.

4. Certain sports, particularly where there is an element of danger, shall require certified coaches. Other sports need no such credential. Sports usually thought of as needing special certification include football, swimming, gymnastics, hockey, basketball, and soccer. Examples of those needing no credential of this kind might be tennis, golf, bowling, archery, and handball.

5. Persons having physical education majors shall be considered certified to coach all sports. Individuals who do not have such a major shall be certified in each sport they coach.

Thus go the arguments. Discussion continues unabated. But what is happening? What are the trends? Are there any solutions or suggested directions?

A short time ago I mailed to each state director and to a few other selected individuals a letter asking them to send me a copy of their latest certification regulations and to tell me in a few sentences what was happening with respect to certification in the area of physical education, particularly as it pertained to coaching. I also solicited their opinion with regard to these matters. Forty replies were received and there were many interesting comments. Even with this information, however, it is hard to discern many national trends. A careful analysis does reveal a few developments.

The following, in my opinion, are the trends in certification which have implications for physical education and coaching:

1. All coaches must be certified teachers. This is now a practically unanimous requirement. The only discernible change is that there are fewer exceptions. These are now mostly in sports such as bowling, golf, skiing, and fencing.

2. The general trend toward reciprocity in certification is also affecting physical education. Some standardization of programs appears to be developing. There are fewer inadequate programs of professional preparation today than there were fifteen years ago.

3. Institutions are being given more autonomy and more responsibility. Programs of professional preparation rather than individuals are being approved and registered. When a program is on the approved list all graduates of that institution receive appropriate certificates at Commencement. The institutions must generally file a lengthy application and accept careful scrutiny if they wish to be on the approved list. Particularly is this true for institutions from out-of-state.

4. Institutions in order to be registered are being checked for regional accreditation to ascertain their quality as a general education institution and for NCATE accreditation to determine their competency in professional preparation. This tends to place greater emphasis on the evaluations by accrediting agencies. This also will probably lead to more uniformity and standardization.

5. Broader statements of certification requirements are being urged. The purpose of this is to permit more flexibility and less conformity in the various institutions. It is said that to state requirements in terms of too many specifics tends to destroy initiative. This trend will work against standardization and is therefore a counteracting force to those previously mentioned.

6. The above trends are indicative of the main one, that of raising standards and improving instruction. It is evident, as one examines certification requirements from the various states, that there are fewer persons with inadequate professional preparation in the field today than there were formerly. Many influences, local and national, are responsible for this.

7. There is a trend toward requiring all teachers to teach in their major or minor field. Because there are so few physical education minors graduated, the effect will be to put more well qualified physical education teachers in these positions. As the minimum number of hours for a minor is now quite generally fifteen or more there is less probability of the poorly prepared teacher being employed.

Two other movements are important but cannot be called national trends. I believe that more physical education than formerly is now being required to certify for teaching physical education in the elementary school. There are also many institutions and some states where all persons preparing for teaching at the elementary level must take some physical education. There is a growing recognition of the importance of physical education at the elementary level. The single salary schedule not only has tended to keep good teachers in the lower grades but has also decreased the feeling that to teach at the secondary level carries more prestige. The whole tendency is to emphasize the importance and significance of good elementary programs and this is now beginning to be reflected in certification policies.

Finally we come again to the matter of special preparation for coaches. Practices are too diverse to designate any trends. It is true that there is a growing recognition that there should be some minimum essentials required for coaching and that this matter needs immediate attention.

The State of Minnesota has now passed the following law which will go into effect for the school year 1966–67:

> 5076.6 PUBLIC SCHOOL ATHLETIC COACHES
>
> (a) A teacher *in a secondary school* who is head coach in any of the following areas: football, basketball, track, hockey, wrestling, baseball, shall be certificated either through professional preparation in the physical education major or minor *program*, or through a special coaching requirement in physical education.
>
> The special coaching requirement is acceptable when the approved preparing institution certifies to the commissioner of education that such person has completed, in addition to his regular teacher education program, not less than *nine* quarter hours in courses *of which Principles of Physical Education is required, and the remaining courses selected from at least two* of the following four areas:
>
> Administration of Athletics
> First Aid and Prevention & Care of Athletic Injuries
> Human Science
> Coaching and Athletic Techniques
>
> (b) Effective with the 1966-67 school year, such certification of new head coaches as stated above shall become mandatory. This requirement does not apply to teachers contracted for as head coaches prior to September 1, 1966.

If the above law in Minnesota proves successful other states may follow suit. Several states have written statements and proposals so as to push for certification requirements as soon as they feel the time is propitious. There are also those who hold that special certification for coaches would hurt rather than help physical education. The claim has been made that many potentially good physical educators would be lost to the profession if coaches could be certified with just a few semester-hours of specialized work. Others still insist that the best physical educators are those who have a single commitment to that field.

A recent change in Indiana indicates a slightly different development. A memorandum from the Department of Public Instruction dated March 9, 1965 is quoted to indicate this change:

> TO ALL SUPERINTENDENTS:
>
> On March 2, 1965, the Amendment to Rule G-7 completed the stages of promulgation and was recorded and filed with the Secretary of State.
>
> RULE G-7. PHYSICAL EDUCATION TEACHERS AND COACHES.
>
> Section 1. Delete that part of Section 1, second sentence, which reads "in grades seven to twelve, coaches of football, basketball, wrestling, track and baseball shall

> be properly licensed physical education teachers, and coaches of other activities shall be regular full-time teachers," and amend to read:
>
> > "In a senior high school the varsity head football and basketball coach shall be a licensed physical education teacher, and all other coaches in grades seven to twelve shall be regularly licensed teachers with at least eight semester hours of approved college credit in first-aid and in courses related to physical growth and development."
>
> The Commission on General Education of the Indiana State Board of Education, by general consent, decided that it was not intended for Rule G-7 to be retroactive from the date of promulgation.

This amendment has not been met with favor by all those in our profession. The feeling is that it increases the emphasis on football and basketball and that only varsity coaches need to be well prepared. On the other hand there are those who feel that this is a realistic move and will therefore be well received by administrators.

It is my opinion that it will be difficult to legislate nationally with regard to these matters. The size of the schools, the density of the population, the supply of qualified teachers, all have a bearing on these problems. The characteristics of individual teachers are also important. I have known dedicated individuals who have been excellent teachers *and* coaches. I have known those who should only coach and likewise those who should be doing nothing but their teaching.

The best we can say at this time is that we must continue to discuss these matters and try to decide what is best for each boy and each girl. There are few obvious trends. Changes seem to occur gradually rather than dramatically. The philosophical and the practical must be blended to find the answers. It is my conviction that we are on sounder ground than we were a decade ago and that this is the result of the work and commitment of many in our profession, be they teachers, coaches, principals, or school board members. I believe another decade will bring us closer still to an ultimate solution.

Certification Trends in California

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The Licensing of Certificated Personnel Law of 1961 and the regulations to implement the law which went into effect January, 1964, represent a unique development in the certification of teachers in the United States. The background of this development dates back to 1955 when a committee was formed to develop a new certification structure. It is believed, however, that the historic event of sputnik in 1957 and the later thrusts into outer space were the chief reasons why the changes took a direction that is difficult to believe. Due to this space phenomenon our educational programs as well as our preparation of teachers were harshly criticized. Not only professional educators but many so-called experts as Rickover and Conant acted to raise standards. Even politicians got into the act.

After many amendments the Certificated Personnel Law was finally enacted and became one of the most controversial education bills that was ever introduced in the legislature. There were many debatable issues in the law. The most controversial issue was that certain instructional areas were declared to be "academic" while other areas were declared to be "nonacademic." This was an attempt to emphasize so-called "academic" preparation and de-emphasize so-called "nonacademic" areas, or what was considered to be vocational preparation.

Naturally, the teachers of the areas which were declared to be "nonacademic" felt they were subjected to second class citizenship. The credential also prohibited prospective teachers from majoring in a nonacademic area and minoring in another nonacademic area. The emphasis of the new law was to enhance preparation in the areas of the natural sciences, social sciences, humanities, mathematics and fine arts, and to lessen the former status given to such areas as agricultural science, buiness education, health science, home economics, industrial arts, nursing education, and physical education. Another aspect included was that only those who majored in an "academic" area could be considered for an administrative credential.

The battle was not ended when the governor signed the bill and it became a law. The State Board had to implement the law and this was a formidable task. A coordinating committee was appointed to make recommendations to the Board of Education. The report of the committee was not accepted by the Board because some of the members and the senator who introduced the legislation felt that it did not reflect the spirit of the legislation. Five members of the Board met and formulated the regulations in a manner which they felt was consistent with the intent of the law. One concession toward the "nonacademic" areas was made in the law. This concession set up criteria for finding nonacademic courses at a specific institution to be equivalent to those of an academic subject matter major. As stated in the regulations:

> . . . the Board may consider, among other things, whether the major and the courses within the major meet each of the following criteria:
>
> (a) The sequence of courses is orderly and logical and leads to the intellectual development, including creativity, of the student.
>
> (b) College or university courses in an academic subject matter are prerequisites or are essential for the successful completion of the course content of the major.
>
> (c) Intellectual development, including creativity, is emphasized in contrast to manual or applied skills.
>
> (d) At the institution substantial scholarly literature and research facilities in the field concerned are available.
>
> (e) When appropriate, laboratory or studio work emphasizes understanding and application of theoretical principles.
>
> (f) The knowledge and understanding to be gained from study in the courses are knowledge and understanding in one or more of the academic subject matter areas specified in Education Code Section 13188 and defined in subsections (c) through (g) of Section 6102 of this title or in other subject matter areas declared to be academic by the Licensing of Certificated Personnel Law of 1961, as amended.

Criterion (f) appears to eliminate any possibility for physical education to be declared equivalent to an academic major. This is due to the fact that subsections (c) through (g) of Section 6102 include only "natural sciences," "social sciences," "humanities," "mathematics," and "fine arts." The strict definition of these terms becomes important, therefore, in interpreting the criteria and applying them.

Several petitions were forwarded to the State Board of Education to declare their nonacademic programs to be equivalent to the academic areas. At first the interpretation of criterion (f) prohibited this as indicated in a letter to the chancellor of a university. "The State Committee reviewed the petitions and returned them to the Board, stating it did not believe it could exercise independent judgement since [this criterion] did not allow discretion in the matter." This reaction was protested and after long discussions the programs at the University of California at Berkeley and at Los Angeles were declared to be academic through a reinterpretation of the criteria.

The implications of this legislature extend beyond the boundaries of California, for approximately 50 percent of the teachers of California come from out-of-state. So far the only two programs in physical education to be declared to be academic in the United States are the ones at the University of California, Los Angeles, and at the University of California at Berkeley. At least there has been established a precedent, as well as an avenue, to seek academic respectability. At the present time any student with a nonacademic major must have an academic minor to qualify to teach in the state of California.

A study was started in January 1965 to identify the changes or anticipated changes made in programs of professional preparation in physical education because of the new credential law which went into effect in January 1964. Twelve universities, 35 four-year colleges and 73 junior colleges in California were surveyed with a questionnaire. The conclusions of this study were:

Results of California Study

1. Definite changes were made and are anticipated in programs of professional preparation because of the new credential law.
2. In the area of general education:
    - (a) An increase in emphasis was given to foreign languages, the physical and biological sciences.
    - (b) Specifically in the areas of the physical and biological sciences, more emphasis was given to chemistry, mathematics, zoology, human anatomy, and human physiology.
3. In the area of general professional education:
    - (a) Attempts were made to delete some courses and to consolidate other courses.
    - (b) The courses deleted in order of frequency were audiovisual instruction, educational curriculum and instruction courses; and counseling courses.
4. In the area of specialized professional education:
    - (a) There was an increase in emphasis or an increase in number of the following courses: introduction and orientation in physical education, history, philosophy and principles of physical education, kinesiology, and adapted physical education.
    - (b) Courses deleted most frequently included health education, safety education, and recreation.
    - (c) Where recreation courses were not deleted they were given less emphasis.
    - (d) Less emphasis was given to the development and acquisition of personal physical skills.
    - (e) As the four-year colleges and universities deleted and placed less emphasis upon health education, recreation, and skill development, the junior colleges were increasing the emphasis or adding these courses to their programs.
    - (f) Generally speaking, the method courses were reduced in emphasis more than the theory courses.
5. In the area of counseling and guidance in physical education:
    - (a) More students were encouraged to major in academic areas and to minor in physical education or to plan on completing a double major.
    - (b) Students were advised strongly to take an introductory course in physical education. This was especially so when the student was uncertain as to whether or not to major or minor in physical education.

    (c) Students were advised to increase their knowledge of the new credential law.

6. The new credential law discouraged many of the best and most capable students from majoring in physical education. The students held a fear for future employment especially when considering the aspects of the law relating to administration.
7. It appeared that the nonacademic stigma attached to physical education affected professional programs.
    - (a) The law created a situation which resulted in a critical evaluation of some programs of professional preparation. This resulted in a more scholarly approach to making changes and in the development of new programs of professional preparation.
    - (b) At the same time, the nonacademic stigma created an unfavorable impression among some administrators with reference to programs of professional preparation.
8. It appeared that the nonacademic stigma attached to physical education affected the profession of physical education.
    - (a) The law created a greater unification of physical educators and increased memberships in the professional association.
    - (b) The nonacademic stigma created the feeling that physical educators were "second class citizens" and lowered the status of the profession on college campuses and in the eyes of the general public.
9. The responses indicated that the profession should initiate a legislative program to change the credential structure. The major issue was the "nonacademic" stigma and that every effort should be made to change this aspect of the law.

Although some aspects of the law were not favorable to physical education, many improvements were made because of the law. Some aspects of the law were well received while other aspects will have to be changed. In a state where there is a daily program of physical education mandated by law in the public schools, the new credential law added fuel to the fire. An all-out effort is underway to preserve this law and to make changes in the credential law which will be more favorable to our profession.

Basic Instruction

The Foundations Concept in Physical Education

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In higher education this is a time of swelling enrollments, curriculum changes, mounting budget pressures, and evaluation. Taxpayers and administrators want value received for budget dollars spent. These are times when our public university policy-makers are listening to university comptrollers, who in turn are tuned in on the budget committees of state legislatures. Education is big business and will become bigger in every one of our states over the next ten years. In 1975 the Illinois higher education budget will run slightly less than $1 billion.

When massive changes like these occur in education, people start to ask questions. In Illinois all publicly supported higher education comes under the jurisdiction of the higher board of education. No longer can a university president present a budget request without sufficient documentation. Capital budgets must show the use to which new buildings will be put. Money for laboratories is allocated according to the topic taught under a formula which specifies the number of square feet per student. Office space is parcelled out according to a faculty member's rank, starting at the top with 120 square feet for full professors. Type "A" gymnasium space needs are determined at the rate of eight to nine square feet per student.

Operating budgets which carry requests for new faculty are honored according to the instructional demand units a department can show. Instructional units are determined by multiplying course credits times student head count. A careful year-to-year check is kept of each faculty member's statistical reports and an ultra careful count of the total enrollment by departments is maintained. In some of our large universities the records made possible by advanced computer techniques show the slightest deviation in the use a department makes of its faculty.

The critical consideration given to space and faculty demands is also being reflected in curriculum evaluation. Astute university administrators are looking for opportunities to reduce operating budgets. This can be done in a variety of ways. Unnecessary services can be discontinued, areas of courses which duplicate and overlap the material in other courses can be eliminated. Courses which have outlived their usefulness can be dropped. Purposes which supply the rationale for entire curricula can be questioned. These practices may sound harsh, but administration today is faced with certain realistic problems. Modern educational costs are mounting and taxpayers want the best possible return for their dollars.

Physical education must keep pace with the rapid advances being made in all academic areas if it is to retain its standing in colleges and universities. New techniques are the rule rather than the exception in the sciences today. The new mathematics which has swept into our schools has sent mathematics teachers scampering for retraining sessions. It has also caused a good deal of embarrassment among fathers who are no longer able to help Junior with his homework.

Everyone has heard about the new mathematics, but what has the average taxpayer heard about the new physical education? Many parents today remember physical education as they knew it in high school or college. That means sports in season and grades determined by attendance and attitude. In too many cases the members of university senates who have ultimate control of curriculum policies retain this same image of the required physical education program, or as we call it today, the basic instruction program.

Traditional Physical Education

It may be true that there have been many changes in physical education programs over the years, but most liberal arts and engineering faculties haven't heard about them. They, too, remember the courses they took as freshmen and sophomores, and when the senate is asked to vote on matters such as keeping the requirement, there is always a chance its members will be influenced by the mental image they hold of courses they took before World War II. Many of our faculty members won't support that kind of a program. They don't believe this sort of university offering can compete for scarce dollars with advances in solid state physics and nuclear engineering. Much of this is our own fault. We haven't kept the faculty informed of the progress we have made, but perhaps the greatest problem we face is the lack of having made curriculum changes sufficiently important to really attract attention in other university areas.

This might sound like I am recommending program innovations as gimmicks to impress the academic forces at a university. This is not the case. Some university basic instruction departments today are starting foundations courses in physical education as a new phase of their programs. The components of the foundations concept are not new. The principles involved predate the experience of anyone in this room. Really good instruction in physical activity has always incorporated pertinent health information that emphasizes the importance of exercise to all biological creatures. Unfortunately, all instruction hasn't been of this type. Even good instruction was not balanced according to content and little thought was given to the possible contribution to knowledge in physical education that can be made through classroom instruction.

The traditional physical education program was almost entirely skill-centered. I am as much aware of this as you are. I have taught many courses in which I extended myself to turn out skilled performers. I wanted to produce a reasonable degree of proficiency in swimming, tumbling, or badminton in every member of the class. Somewhere in the course I taught some health knowledge, a bit of information on training, as well as certain basic safety precautions. It was my hope that the degree of skill attained would attract the participant back to the sport in the years ahead. I also hoped that the physiological, psychological, and sociological outcomes of the activity would be so self-evident to the student that he couldn't fail to include swimming, badminton, or whatever it was, in his daily or tri-weekly exercise regimen after his university days were finished.

Unfortunately, this was not enough. Skilled and active though this undergraduate was, he found it easy to slip into the ranks of the weekend athlete after leaving college. At age 35 or 40 he was relatively inactive, and soon thereafter he had fallen prey to the ways of our sedentary technological society. The element missing from the traditional physical education courses was the "know why" of exercise. The student had never been sufficiently impressed with basic physiological involvement because no one had ever bothered to intellectualize this information with him.

The student we describe believed that exercise was good for the human creature. He knew, as most everyone does, that activity made him breathe faster and the blood course more rapidly through his circulatory system, but he didn't understand it sufficiently well to make him want to build a daily exercise program into his schedule for living.

Need for Motivation

What I am trying to say is that this university graduate had never been properly motivated. All of us know the difficulties encountered in the educational process. It is said that motivation is an internal or acquired determinant of behavior. Its place in the behavior cycle is between stimulus and response; it is a process of arousing action, of sustaining activity once started, and of regulating the activity pattern. Some believe that knowledge and attitudes in themselves provide the base for motivation, but we have been trapped before by this concept. How many people still smoke who know perfectly well the contents of the surgeon general's report on smoking? For that matter how many physicians, knowledgeable concerning the physiological effects of exercise, make no provision in their lives for an activity program? Regrettably, many other procrastinators have sufficient knowledge about and a proper attitude toward exercise, but carefully manage to avoid it.

How then should the physical educator approach the perplexing problem of motivation? One theory holds that motivation is built on primary drives, such as hunger or thirst, and is achieved only through positive or negative results which accrue from personal experiences. In the educational process these experiences can be contrived. The learning associated with sports participation seems to fit this concept reasonably closely. Some authorities believe that if the habits involved in exercise and sport are strong enough, any drive will cause one to participate, even though the drive and reward lie outside the activities themselves.

The logic behind this concept supports the motivational mechanics of the Foundations of Physical Activity course offered at the University of Illinois. It is required of all freshmen men. Half of them take it the first semester and the rest complete it the spring semester. More than 1,900 men are currently enrolled in the course. Brief reference to the course's content and methodology is made here primarily to demonstrate the manner in which we attempt to change behavior patterns related to exercise. We believe motivation is a primary outcome of the course. If we can influence the student's conduct beyond his freshman year, we think we have made a contribution.

The New Physical Education

The aims of foundations of physical activity are:

1. To develop an understanding of the role of physical education within our society.
2. To acquaint the individual with the human organism in relation to physical activity.
3. To acquaint the individual with some effects of physical activity on the growth and development of the human organism.
4. To develop an adequate understanding of fatigue, relaxation, rest, sleep, diet, and aging as these factors relate to health and well being throughout life.
5. To conduct a testing program which includes classifying each student's physique and evaluating aspects of his organic and motor fitness.
6. To provide a progressive conditioning program in which the student is exposed to several selected methods of training.
7. To provide counseling and guidance in the selection of activities gauged to meet immediate and future needs, emphasizing the values and limitations of various types of physical activity.
8. To acquaint the student with special services offered within the university environment by the College of Physical Education.
9. To make known facilities and methods from which a personal program can be designed and implemented.
10. To inform the student of reliable sources of information concerning the effects of exercise on his personal health.

The student attends one classroom lecture per week and two laboratory periods in the gymnasium. Typical of the classroom sessions are talks or films on human anatomy, physiology, kinesiology, as well as the psychological and sociological aspects of exercise, obesity, arteriosclerosis, the bases of training overload, and modern concept of health and fitness in later life. The student is assigned readings on these lecture topics in the foundations manual which was written for this course.

The two laboratory periods per week are given over to testing and conditioning. Tests for strength, agility, and cardiovascular efficiency are administered by the student under supervision. Somatotyping is explained and body typing done in order to arrive at a better estimate of individual exercise capacity. After the early laboratory meetings the student takes his preliminary fitness test. Each test item is carefully recorded. The laboratory periods are then devoted to the learning and use of physical conditioning activities such as beginning interval training, weight training, and circuit training.

We know that dramatic changes are not likely to take place in our students as the result of two half-hour laboratory tests sessions per week. Effort is made to correlate the lecture materials with laboratory activities. This, we hope, is compoundng the information of attitudes which will influence behavior. After nine weeks of conditioning, the second fitness test is given. The student now has an opportunity to observe the gains he has made over the scores of the first test taken. He is not graded on the improvement he makes which eliminates most of the incentive to maximize the differences between the results of the two tests. Generally we notice a significant difference between T1 and T2. Usually this is a new and pleasant experience for the student. Most of these people have never before participated in scientifically-planned conditioning. Perhaps only 20 percent have participated in high school athletics and so are experiencing the changes that systematic exercise can develop for the first time in their lives. The chap who never could chin himself is pleased to know that he now has the arm strength to pull up two or three times. He is also pleased with the realization that he can run a mile, and that he can do so in less than seven minutes. Furthermore, he is made to understand that he still is on the lowest rungs of the ladder which represents his ultimate fitness potential. The challenge which this understanding excites in many of our freshmen contains the seeds of motivation which we think will convince them of the desirability of a regular exercise program. This new experience is backed up by a knowledge of what exercise is doing for him. He has at his disposal a cardiovascular index which he can use to help him determine the safe ranges of energy expenditure.

Another feature of the foundations course is the guidance procedure which aids the student in making wiser choices of the physical education courses he will take during his remaining three semesters. This technique considers his present needs, the carry-over value of various activities, and their possible family use, as well as his present level of skill and interest in the activity. No effort is made to require the student to enroll in specific courses which were indicated by his guidance profile sheet. We do find by spot checking, however, that students are strongly influenced by the guidance procedure.

We are now in our third year of experience with this new course and the question which I know is in everyone's mind is, *does it work*? Can we motivate students to continue with exercise after they have completed the physical education requirement? The sophomore and junior men at our university have completed "foundations" and half the freshmen are now approaching the end of the course. One means of checking voluntary participation would be to learn how many juniors were enrolled in physical education this semester. Most any junior would be electing physical education on his own initiative. We haven't looked into this as yet, and may not because this would represent only one area where we would find increased activity. Informal workouts as well as greater participation in intramurals should also be checked out if we are to get an accurate picture.

Last spring our people conducted an attitude survey among 4,200 men enrolled in the basic instruction program. The results were rather gratifying and if the attitudes expressed are any index to motivation, we haven't failed in our efforts.

Some of the questionnaire returns were as follows:

1. Do you think you need regular physical activity?
   Yes 4028 Not sure 69 No 109
2. Do you need physical education in sports, dance, and exercise?
   Yes 2906 Not sure 516 No 770
3. Should the University provide opportunities for such education?
   Yes 3897 Not sure 117 No 104
4. Should the University require some minimum number of semesters?
   Yes 2492 Not sure 468 No 965
5. Should the University give credit for Physical Education courses?
   Yes 2416 Not sure 465 No 1297

There were ten questions in all dealing with credit for honors, credit for graduation, hours per week spent in intramurals, and in informal active recreation. We were pleased to know that almost everyone thought they needed regular physical activity and that nearly 60 percent of the group felt that a minimum number of semesters should be required.

Several weeks after the semester started, our assistant dean for Facilities and Equipment began to receive complaints from towel room attendants at two of our gymnasiums that we were constantly low on towels. We had purchased the usual number of new ones during the summer to start the year. We knew there would be about 300 more freshmen men than we had the year before but were under the impression that we had everything under control. The complaints increased and irate students grumbled about the poor towel service. Don Eason hung a tattered towel remnant over his window at the Men's Old Gymnasium labeled "crying towel." Beneath it was a sign saying "This is the only towel we have." We put through a supplementary order to the athletic association for 27 dozen more towels and finally had to purchase 25 dozen more from the dormitory supply to tide us over.

Upon investigation, we discovered that during the month of October 1965 our gymnasium stores had issued 7,200, or 23 percent more towels than they had during October 1964. We were perplexed but still couldn't account for this change until the students gave us a clue. They said "most of the fellows are taking this foundations course seriously." We have observed more men running and using the exercise rooms at odd hours in all our buildings, but the kids finally had to tell us that they had stepped up the number of workouts they were taking between the regular meetings of their physical education classes.

The explanation of our towel shortage may sound like an oversimplification. Until we get a better interpretation, however, we continue to believe that the techniques we have employed in the foundations course motivate students to engage in exercise.

Learning Theory as Applied to Physical Education[1]

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Psychologists during the twentieth century have been formulating and modifying theories of learning. Extensive research has been the basis for these theories as well as providing a means for questioning them. Although learning theories are far from fully developed and clearly defined, they can offer much to the physical educator. Familiarity with learning theories should encourage intellectual stimulation and thought, provide better understanding of learning phenomena and the laws regulating them, as well as promoting a method of teaching compatible with the teacher and the theorist.

Physical education, like all the disciplines in the educational sphere, is interested in methods whereby teaching and learning will be most effective. A theory provides the guidelines by which one may work. It suggests a frame of reference, a means of obtaining objectives. Just as it is desirable for an individual to seek out his philosophy in life, it is necessary for the teacher to work under a theory of learning, a theory consistent with the latest facts and least liable to criticism.

Of the many theories attempting to explain and predict learning and behavior, some have unique differences and have still managed to weather the stormy years. They will be presented first in brief explanation and later in relation to physical education. The learning theories to be examined include one stimulus-response theory (Thorndike), two varieties of stimulus-response behaviorism (Guthrie and Skinner), a field theory (Gestalt), and other related theories.

Learning Theories

Stimulus-Response Connectionism and Trial and Error Theory. For many years, Edward L. Thorndike was the leader in the formulation of learning theory. He was the forerunner in stimulus-response (S–R) psychology of learning, and his theory has been termed "association theory," "bond theory," or "connectionism."

These terms simply imply that there are no intervening elements between the stimulus and response, that the connections are strengthened automatically when they occur. Thorndike gave much impetus to knowledge in the area of problem solving and contributed his famous "laws" of exercise, effect, frequency, recency, etc. Of interest to physical educators is Thorndike's belief that learning takes place through trial and error. In other words, the learner when faced with a problem does not suddenly perceive the solution, but gradually through random behavior learns the correct response. Motivation is extremely important, and the laws of readiness, exercise, and effect were utilized by Thorndike to explain how learning was promoted.

In applying this theory to the learning of physical education skills, the teacher would allow the students to use various methods in attempting to achieve the desired goal. Their behavior is not closely controlled, especially when new skills are introduced. They "shake themselves down," "get their feet wet," and once familiar with the situation, will supposedly be more ready for specific learning cues.

Another part of Thorndike's learning theory deals with transfer and is referred to as the "identical-elements theory of transfer." Basically, he states that all learning is specific; if it appears to be general, it is only because the new situations or acts contain similar elements of old situations or acts. This transfer theory has given rise to Franklyn Henry's "memory-drum theory" and the concept of specificity versus generality is related to athletic skills under the latter theory.

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[1] Bibliography may be obtained from the author upon request.

Returning to Thorndike, it is important to remember that in trial and error theory the emphasis is one the learner and his motives, readiness, and needs. Also considered are the rewards and effects which "stamp in" the portions of a random activity which bring chance success. All parts are regarded singularly and as isolated. This is in contrast to Gestalt theory, as the reader will see later. Finally, the theory stresses the importance of the need or intention to learn. To learn well, the learner must participate actively; to do that, he must have drive.

Contiguous Conditioning. Edwin R. Guthrie attempted to remain true to the basic S–R theory. His was the simplest and probably the most ingenious of all the learning theories.

His theory can be summarized quickly through his four postulates. The principle of association states that any time a response is made to stimulus, that same stimulus becomes a direct cue for that response. There is no notion of reward, cognition, or motivation. According to Guthrie, any one of these conditions changes the stimulus. Postulate 2 states that a stimulus which accompanies two or more responses becomes conditioned only to the last response.

Postulate 3, the principle of response probability, states that the more times the same stimulus situation is presented, the better the chance that the desired response will occur. Finally, the last postulate is concerned with the dynamic nature of the stimulus situation; the stimulus pattern often changes due to boredom, fatigue, hunger, sickness, etc.

Let us see how this simple theory, in general, would apply to the learning of an athletic skill. The basketball player desires a foul shot which can score with a great deal of consistency. If his environment, body position, and body movements are executed similarly during each trial, the probability of success is increased. For instance, his feet are aligned in the same manner during each attempt. He bounces the ball twice preparatory to shooting. The follow-through is always the same. Even the addition of a breath while shooting changes the stimulus environment. The presence or absence of players along the foul lanes or of spectators in the gymnasium creates an altered environment.

The more practice a player has, the greater the probability that he will exhaust the pool of stimuli which have a chance of occurring in that situation. Hence, a familiarity with varying circumstances makes for a greater chance for a successful foul shot. Theoretically, according to Guthrie, if there are no competing stimuli—if the succeeding situation is *exactly* like the preceding one—there should be an S–R association and the response should be duplicated. However, stimuli vary from trial to trial, affecting a response variation.

As was stated previously, the theory is simple and is used more to explain behavior rather than predict it. The gradual acquisition of a skill is described through stimulus sampling and the contiguous association of the stimulus and response. To a certain extent, the theory might be considered a perception theory, as the learner has to obtain knowledge of the environmental stimuli. He has to perceive in order to react successfully.

Operant Conditioning. Of all the prominent learning psychologists in this century, B. F. Skinner has had the most impact on our culture. He is not only interested in predicting behavior, but also in controlling it—an idea objected to by many people. Among other contributions, he is the author of *Walden Two*, a novel on the development of a Utopian society made possible by controlling human behavior. He invented the Skinner box, where animal behavior could be observed and data produced visually in readily comprehensible form. He developed the "baby box," an enclosed compartment in which the baby lives in a constantly maintained temperature. Skinner's notion of the teaching machine has gained wide theoretical and practical acceptance and has had an enormous impact on industry and education.

It would take too long to discuss Skinner's theory of operant conditioning as contrasted with respondent conditioning (S–R standard theory, e.g., Pavlov's works). In its entirety, it is actually irrelevant to the discussion. Perhaps the theory can best be represented by the widely-used "shaping" concept.

If there is a response desired and the possibility of occurrence is quite remote, the chance for success is increased if the act is reinforced whenever it occurs. However, there is an alternate possibility. The desired response should be thought of as in the larger domain of behavior. Therefore, reinforcement should be made for a general response in the direction of the desired response.

For example, the desired response might be for a novice bowler to execute a four-step approach and roll a hook ball into the 1-2 pocket. He should be reinforced (verbal encouragement and compliment) more and more as he comes nearer to attaining the ultimate goal. According to Skinner, the effect of reinforcement is extremely important. The bowler, instead of achieving the desired movement by chance and trial and error performance is channeled into the correct groove through constant verbal encouragement.

The teaching machine apparently is an extension of this shaping concept and perhaps has great implications for physical educators. The teaching machine does not allow any wrong response to occur throughout the learning of a subject. It shapes learning, from the simple to the complex. If a child is learning to read, he must first know about forms. Matter becomes more complicated as the child learns about forms, letters, simple words, more complex words, and finally sentences. He is not permitted to continue until he has mastered all the information presented up to that point. He never has to go back because he was not permitted to make errors along the way.

Physical education academic courses such as physiology of exercise and kinesiology might be satisfactorily taught this way. Teaching machines are used in other academic areas. The machines allow students to move at their own speed while the teacher assists those students having difficulties.

Then again, perhaps the entire concept of the teaching machine can be applied to the teaching of physical education skills. When learning a skill (hitting a tennis ball with a forehand stroke, for example), each element of the movement is taught and correctly executed before advancing to additional or more complex movements. The student learns the correct stance, the correct movement, and in a stationary position strikes a ball thrown from a machine. He does not begin hitting balls on the run until this act is successfully performed.

He learns to hit balls accurately when running sideward, then forward, then backward. It is important to remember that complex movements are building on simpler ones. No advancement is allowed until mastery is shown at a particular level of skill. No errors are permitted. Later on in the course, there will be no competing responses (wrong and right) for only the right ones have been learned.

How many of us as youngsters learned sport skills incorrectly, or, putting it more mildly, not quite perfectly? When you then attempt to execute the skill in good form later in life, much difficulty arises. This is because of competing responses. Is it not easier to learn a skill correctly for the first time than to undo past error-filled experiences?

Skinner states that behavior is lawful, not by chance. It is related to environmental manipulation, and as teachers, we certainly can manipulate the movement patterns of our students. How much behavior and performance can or should be controlled is a matter of conjecture. Perhaps time, knowledge, and experience will tell.

Gestalt Theory. The gestalt movement had its greatest impact on America in the 1930's. The theory *indicates that the learner perceives meaningful relationships* in his environment and gains insight into the understanding and solving of problems. The German word *gestalt* means form or shape. Gestaltists believe that learning is not random and accidental, but instead, a result of organized, meaningful, and perceived experiences. The learner perceives the environment as a whole, he constantly reorganizes his experiences, and eventually insight is inevitable. The theory goes beyond a simple S–R explanation of learning.

One of the greatest contributions of gestalt theory to education is the concept of emphasizing the holistic manner of teaching material as contrasted to an atomistic relationship of parts. Gestaltists emphasize the whole instead of the part.

Many physical education teachers introduce a skill in its entirety first and then break it down into its components. The learner understands what he is attempting to achieve and constantly re-evaluates his experiences until he finally is able to put into action that which he perceives as the desired act. He strives to make sense of each task, to search for significant relationships between things, until his progress will occur in the discovery of insightful wholes. The gestaltist believes that the learner, once he gains insight in shooting a basketball from ten feet in front of the basket, for example, will be able to transpose this experience so that it leads to skill in shooting from fifteen or twenty feet away from the basket.

Basically, it is important for the reader to comprehend that the gestaltist believes that during practice changes go on within repetition, not as a result of repetition. Also, transfer from one skill to another does not take place because of identical elements but rather similar patterns or relationships.

Other Theories. It would be impossible to do justice to all the theories of learning in this paper. Others are worth mentioning, at least briefly, for their significance.

In the 1930's, psychologists revolted against the physiological explanation of behavior, and one of the leaders of this revolution was E. C. Tolman. He was powerful in insisting that psychology could study performance at the purely behaviorial level as contrasted with a physiological explanation. He incorporated ideas of the gestalt school and S–R theorists in his explanation of learning and behavior.

Tolman introduced the concept of the intervening variable, that something occurred between the antecedent condition S and the behavior R. Finally, he offered the possibility that there are six kinds of learning, one of them being the learning of motor patterns. He accepted Guthrie's explanation for the learning of motor movements.

Clark Hull followed Tolman in influencing learning theory. He developed many postulates and definitely described the effect of intervening variables on behavior. For example, Hull's theory of a performed act would be described by the symbols

$$S^{\dot{\bar{E}}}R = (S^{H}R \times D \times K \times V) - ({}^{I}R + S^{I}R) - S^{O}R - S^{L}R$$

This means that the momentary effective reaction potential is equal to the number of reinforced trials x drive x incentive x intensity of stimulus - reactive inhibition + conditioned inhibition — the fluctuation of the individual from moment to moment — reaction threshold.

An important aspect of Hull's theory for physical educators is the effect of practice on performance. Hull demonstrated that repetitious practice led to what he termed inhibition, a sort of depressant variable which is built up during nonreinforced trials which offsets the strength of the performance. Reactive inhibition dissipates with rest. This would explain why a basketball player who attempts 100 consecutive foul shots would most likely perform his best in the middle trials and worst nearing the termination of the trials. Yet, the following day, he is able to begin again at a greater skill level than he had at the end of the previous practice session. This is a perfect example of the effect of practice on performance rather than learning. Obviously, the performance level of the participant can be raised or hindered, depending on the manner in which skills are practiced. However, the true extent of learning may be disguised.

One of the few modern attempts at linking psychology and physiology has been made by D. O. Hebb. His book, *Organization of Behavior*, describes a neuropsychological theory of learning. He constructed a conceptual nervous system consistent with neurophysical facts, including phase sequences and cell assemblies in explaining primary and secondary learning.

Hebb emphasizes the importance of early physical and perceptual experiences for later success in life in development and learning potential. His theory has provided much fuel for thought for psychologists as to "critical learning periods" of certain movements, knowledges, and skills. The optimal age and/or level of maturity for the learning of motor skills is of great concern to physical educators. Perhaps the contributions of Hebb and other psychologists in this area of "critical periods" should be understood and applied with greater energy and interest to the learning of athletic skills.

Lately, there has been a great interest in comparing man to a machine. Theories have been generated under the title "information theory."

Generally speaking, in this theory the organism receives a certain amount of information (S) in a situation, and this information is termed "bits." The organism has to transmit (T) these bits and respond (R), but since no mechanism is perfect, information may be lost when encoding, decoding, or transmitting.

Sensory processes encode the information (neural processes are functioning) which is translated into muscle movements. Aviation psychologists have found ways of uncovering the number of bits received and responded to and are able to approximate the channel capacity of an individual. More complex stimuli will naturally affect the channeling of desired responses to such an extent that the individual cannot transmit accurately above his capacity.

Unfortunately, the aviation psychologists have experimented in isolated areas and very little related work may be found in other fields. If the channel capacity of a person learning an athletic skill could be determined, the ideal number of bits would be presented to him at one time resulting in the most productive response.

When considering channel capacity, past experiences are important. These experiences are fed back to the individual, determining to a great extent his response in a similar situation.

Basically, human information processing is compared to a machine system. Both the human and the machine compare the input signal with the output signal and work toward reducing the difference between them. There are two types of independent variables which may be thought of as influencing the performance of a skill. One is a procedural variable, man-centered, which includes instruction, number of practice trials, and length of practice trials. This view is espoused by experimental psychologists, and they see behavior as a function of variables (habit, motivation, inhibition) which determine a conceptual state.

The task variable is machine-centered, and has to do with the input and output signal. It is concerned with time lapse between the input and output as well as information lost in the process. Engineering psychologists emphasize task variables, and this machine dynamics theory has been termed a closed loop servosystem.

Perhaps the best suggestion is that there should be a synthesis of the laws of human behavior as a function of task and procedural variables. Because the study of man as a machine is a relatively new model, much work needs to be completed and refined before it will be accepted by areas other than engineering and aviational psychology.

However, the information theory has much implication for physical educators. The concept of regulating the information handled by an individual so that he can effectively utilize it is an intriguing idea. The amount of information can be translated to the intricacies of a skill or a number of motor skills to be taught by the physical education teacher to his class. An awareness of the past experiences of his students in the sport to be taught, the amount of material that could be handled by them, and the nature of the material in terms of the proprioceptive and sensory information it affords would permit the physical educator to teach much more efficiently and effectively.

Application of Learning Theories to Physical Education

A difficulty in accepting and applying a particular learning theory is that each of the preceding theories under discussion emphasizes a different aspect of learning. The emphasis might be problem-solving; the nature of the stimulus, perception, the nature and effect of intervening variables, or any one or combination of a number of factors.

There is the possibility that there needs to be more than one general learning theory to describe and predict performance in a given area. For instance, a theory accounting for memory might be different from one describing perception, understanding, the learning of words, or the learning of motor skills.

A contrasting idea would be to follow an eclectic point of view described as functionalism. The functionalist gathers all the facts and theories and incorporates the most plausible and acceptable parts of the theories into one theory. He is open to change and therefore his theory is very loose. One may criticize an eclectic point of view, for when you have a little of everything you sometimes end up with nothing. Also, there is a lack of consistency of thought within the theory.

Because of the manner in which this theory is formed, there are some who hold that functionalism should be considered a position rather than a theory. In either case, a functionalist approach may have the most meaning for the physical educator at the present time because of the apparent weaknesses in each of the most prominent theories. An even better reason for its acceptance is that all the learning theories have been developed mainly on the strength of research completed on human learning of prose, nonsense syllables, mazes, and pursuit rotors, and animal learning in the Skinner Box, on mazes, and in discriminatory situations. Relatively little research may be found on the learning of motor skills and specifically on athletic skills.

A simple S–R explanation might not be enough for the learning of motor skills. True, the stimulus, whether it be an isolated object or a particular situation, must be understood and controlled to a certain extent if the desired response is to be made. The relative complexity or simplicity of the stimulus and the type of response to be made are important considerations in the learning situation. Maintaining a constant, uncomplicated stimulus, especially during the early trials of learning a new skill, is most necessary.

The tennis instructor might not have beginning tennis players hit the ball back and forth in every manner and position conceivable and hope that they learn the correct movements. Instead, each player would stand constantly in the same position on the court, the ball being tossed to him at the same rate of speed and distance from the body, and he would hit forehands over and over until he had somewhat mastered the technique. The stimulus situation is stable and relatively simple. It becomes more complex as player improvement necessitates the progressive change.

This method of teaching might not be the best nor the most practical. Perhaps, when a student learns a new skill, he should initially be allowed to explore, to feel his way about, to be permitted to practice the skill in a trial-and-error method. The student should have observed the ultimate desired skill via film or demonstration so as to have an idea what is expected of him. After some exploratory trials, a more controlled learning situation might be followed in which desired responses are shaped whenever possible. The learner who is in danger of fixating an error must be interrupted and the significant parts isolated and related to the whole that is giving trouble. By means of appropriately timed guidance and emphasis, the teacher can direct the conditioning process so that the proper cues are reacted to and that the conditions reinforce the desired response.

These two opposing learning methods are concerned mainly with the stimulus environment. The role of perception, feedback, motivation, stress, and other variables relevant to learning must also be considered, for the learning of one skill or all skills in tennis or any sport is probably determined by factors in addition to the isolated stimulus and response.

In order for the student to perceive, to structure his environment, past experiences relevant to the new skill to be learned are necessary to promote this process. Insight is best achieved when understanding is present. A soccer player, unfamiliar with squash, may have great difficulty in learning this sport. The tennis player would probably have much greater success with squash because of the similarities between these two sports. The tennis player perceives the object of the game, its movement, style, and manner. The soccer player questions the value of a sport enclosed by four walls, utilizing a racket and a small hard ball. He cannot conceive of this being a sport; he has trouble visualizing goals, purposes, techniques, and strategy.

This does not mean that insight will not occur eventually. The point made here is that the teacher must consider the background of his students and their familiarity and past participation in various sports, in order to determine the success they will have learning a particular sport. The growth of skill is affected by the learner's perceptions of the relationship between cues. It is not enough to have the cues and their relations present. They must be responded to.

The feedback concept, borrowed from machine dynamics theory, considers the person's past experiences in a specific learning situation. Previous experiences are filed away in the human organism's transmission system and will affect the response made to the situation when it arises again. Feedback assists the organism in interpreting and responding. It provides a more structural meaning to a stimulus and usually results in a quicker, more appropriate response.

Also to be considered in addition to the nature of the stimulus, the response, perception, and past transactions, is the effect of motivation. A person performs better when motivated, in other words, when the act is reinforced. An act is reinforcing if it is rewarding to the individual, either externally or internally. External rewards include praise, money, or food, while an internal reward is one in which there is satisfaction and joy in performing the act itself. Obviously, internal satisfaction, or doing something for its own, is a more ideal condition than one where external rewards have to be offered to encourage the preferred response. It does appear, however, that some sort of reinforcement is necessary if the S–R is to be fixated and performance enhanced.

Stress, anxiety, and tension will have an effect on performance. A certain amount of stress is necessary for optimal performance and too much will hamper the productivity of the individual. The necessary amount of stress varies with each person, and therefore individual consideration is necessary. The inducing of stress in a situation can be considered another method of motivation and as physiological and psychological advancements are made in the understanding of stress, the physical educator should stay abreast of these findings.

Practice conditions will noticeably influence performance of a skill. Optimal rest-practice ratios, number of practices, length of practices, and organization of the practice periods are important considerations for the physical educator and coach. How these factors contribute to immediate performance and later retention of athletic skills are not clearly understood. Generalizations have been made from psychological literature as to the effects of these variables, but are mainly deduced from studies using a wide range of materials other than athletic skills. Perhaps it does not make any difference as to actual learning if a skill is practiced repeatedly by the student or if he pauses to rest at certain intervals. A performance level does not always indicate the actual amount of learning that has taken place. The important consideration for the physical educator is that the skills learned by the students are retained for a long period of time.

There is much evidence to show that gross motor skills are usually retained over a much longer duration of time than are other learned materials, e.g., prose, poetry, and fine motor skills. The amount of effort exerted by the student in learning might have its effects on performance. Effortfulness would depend on the physical energy required for the learning of the task and the length of time without rest while practicing.

Greater overall bodily effort is required for the mastery of athletic skills as contrasted to learning nonsense syllables or rotary pursuit tasks. This may be one of the reasons why retention as well as reminiscence has been demonstrated for a substantial period of time after the initial learning of athletic skills. Overlearning of an S-R connection will cause this bond to be fixated and repeated. Most motor skills are over-practiced (consider the time spent on reading a homework assignment in English as contrasted with the amount of time necessary for mastering the hook shot in basketball, the tennis serve, and accuracy at the forty-yard stripe with a bow and arrow). This would also account for the greater retention of athletic skills.

The learning of motor skills necessitates the consideration on the part of the teacher of many variables, a number of which do not seem to appear when one considers the learning of other materials. An adequate learning theory should be able to explain the phenomena related to the learning of neuromuscular coordinated movements and patterns that we have termed motor skill. And, in this whole area of learning is included immediate performance and ultimate retention.

Any reference to a learning theory of motor skills must include a most important factor: participation in the form of movement and physical response is the condition whereby skill learning will be most effective. Verbal instructions are important cues to learning. Visual aids also assist the learning process. However, the concept of learning by doing must prevail in the teaching of motor skills.

The student has to actively participate in the situation, he must move, repond mentally and physically, in order for the experience to be meaningful to him. Studies have demonstrated the uselessness of too much verbal explanation. True, individuals vary by nature, and some will learn more effectively by one means rather than other. Also, the skill level of the students must be considered: advanced learners, those with a higher degree of skill in a sport, will probably benefit more from verbal instructions than will beginners. But beginners have to respond actively to the situation, whether it be by internal force or external manipulation.

Therefore, regardless if the learning situation is termed a stimulus or a gestalt field (pattern, configuration), it must be responded to by movement. This activity will strengthen S–R bonds, bring quicker insight, decrease the errorful trials, or strengthen certain neural pathways, depending on your theoretical interpretation of what is taking place. Regardless of the theoretical application, movement is necessary for the learning of athletic skills.

The physical educator may look to Skinner, the gestalist, Thorndike, or some other theorist for a general theory. Whether behavior is to be shaped and controlled, allowed to proceed by trial-and-error, encouraged by setting an environment for insight, or a combination of these concepts, is for the physical education teacher to decide.

The specific variables which may affect performance and learning may have theoretical as well as practical importance. Learning may be viewed as a simple connection of a response to a stimulus. Then again, it may be this and much more; a result of such factors as maturation, readiness to learn, motivation, past experiences, practice conditions, capacity, and so on. The human being is no longer considered to be a switchboard for incoming impulses and outgoing responses. Most responses are not automatic. Once the stimulus or information is acquired by the individual, he interprets it in the light of past experiences and future consequences. His response reflects his decision, and it is not elicited automatically, without regard to various factors.

Delving into the research and examining the theories would best afford the physical educator with a consistent and acceptable theoretical and practical approach to the teaching and learning of skills. There is no pat answer. Each of us has to read and interpret and apply where feasible. We work under different conditions in varying situations, resulting in possible dissimilar approaches to teaching. Theories constantly are being remodeled and other ones formulated in light of new evidence. An awareness of these additions and changes in theory, of the current research findings on the learning of motor skills, and an interest in both will lend greater support to the area of motor skill learning and performance.

Curriculum Justification From the Standpoint of Facilities

STAN BURNHAM
University of Texas

In our generation we have lived through the greatest achievements of science and technology ever recorded in the annals of mankind. The related fields of the allied health professions have been blessed with startling new drugs and methods for the cure and mitigation of human ailments not previously amenable to treatment. Other discoveries and developments in our related fields have given us the tools, the methods, and the knowledge to help man live most effectively in a modern society. Historians of the future generration, however, in assessing our century will undoubtedly say that physical education did not keep pace with the trend of educational events produced by progress.

A look at history indicates that any serious fundamental change in an intellectual outlook of human society must necessarily be followed by an educational revolution. For some time we have talked about the fundamental changes that must take place in higher education, especially physical education, if we are to produce a citizenry that is knowledgeable of its basic needs. Although many positive changes have taken place in the past few years, no educational revolution has occurred in physical education. In many institutions of higher learning we are doing the same thing that we did twenty years ago, with no change in organization, method, or technique. With each new generation our knowledge increases and man's needs change with great strides, yet the methods of teaching this knowledge and meeting these needs are at a relative standstill. In physical education, the routines of teaching the traditional activities by traditional methods are so implanted in our educational systems that no one is willing to structure new programs and make new use of facilities for meeting the needs of todays students. In several states recent attempts by legislators to place restrictions on the expenditure of state funds for physical education facilities and programs at the college level indicate that there is considerable dissatisfaction. Further, it is evident from comments made by professional educators that this dissatisfaction will continue unless substantial changes are made to improve programs in colleges and unversities. In my own state one of the principal defenses used in combating this criticism of existing programs has been that we in the profession should be allowed to work out our own problems and initiate whatever change is needed, rather than permitting the legislature or others outside the profession tell us what to do. We know that improvement is not inevitable, and we also know that attacking our problems in a blind, piecemeal fashion, through trial-and-error procedures, can lead only to frustration and disappointment. We must therefore take positive action to justify and upgrade our basic instruction programs through efforts requiring a deeper insight into our overall purpose and objectives. We must start where any move toward improvement must always start—with an educational program restudied, reinforced, and revitalized.

Any attempt to justify curriculum from the standpoint of facilities must be made from an assumption that the curriculum afforded by the available facilities meets the objectives prescribed for physical education. These objectives should be consistent with those established for education and should ensure the following for each student:

1. An optimum level of physical fitness.
2. A knowledge and understanding of the place of physical activity in man's life. This should result in an habituation to physical activity, with an understanding of factors which relate to man's well-being.
3. Optimum skill in a number of physical activities or sports in which one can participate safely and successfully throughout adult life.

The activities included in the program should be selected and conducted in terms of the extent to which they meet the objectives outlined above and should not be prescribed by available facilities. This means that some activities frequently included in the traditional program should be excluded. It may also mean that supplemental activities be included and taught as a part of certain activities which do not sufficiently meet the prescribed objectives.

Basketball, softball, volley ball, tennis, football and badminton are traditional activities of basic instruction programs. These activities make up the major part of college programs because facilities are available for the teaching of such activities. However, if we are to justify these programs—housed in expensive facilities—they must be instructional in nature, with major emphasis placed upon organized learning experiences rather than on physical activity in organized play. In order that basic instruction in physical education be on tenable grounds the program must be so organized and conducted that students benefit most from the learning experience provided. It becomes most important, therefore, that individuals be assigned to physical activity classes on the basis of:

1. A medical examination administered by an approved physician. Each student should be eligible for participation in activities on the basis of the medical examination.
2. A physical fitness or screening test upon entering the program. Individuals falling below minimum standards should be assigned to classes designed to contribute to their special needs as revealed by the fitness test.

3. Individual needs of students. An adaptive program should be provided that includes corrective and remedial activities for those students who are not able to participate safely and successfully in the regular program.

Education today is on the march; it is functioning to fulfill immediate and long range needs, and colleges and universities are rapidly converting their sources of strength to meet the tidal wave of change brought on by growing economic pressures, new interests and developments, and changing philosophies. What is the role of physical education in this time of violent social agitation?

The role of physical education in our modern society must be one of far greater commitment to human needs through organized learning experiences. This commitment embraces an ideal of the best possible education for every individual. It entails a concern for not only the quantity but also the quality of educational experiences through physical activity. It represents a forthright recognition that as a profession we have not really measured up to our ideals of educational opportunity. And it is an assumption of the moral responsibilities for physical education in the face of social and economic progress.

How do we justify curriculum in terms of facilities, budget, or other dictated limitations? We do so to the extent to which we are able to produce successful outcomes in terms of prescribed objectives and overall purpose. But today, as in the past, we must realize that progress is not possible without change, and change is a matter of vital concern in modern education. We are going to have change in our basic instruction programs. This change will come either because we recognize a need for it ourselves or because it is forced upon us through legislation arising from failure on our part to make a satisfactory justification for our program as to cost of operation and contribution to the overall educational venture.

It is time for restudy, reinforcement, and revitalization of our programs of basic instruction. This no doubt will call for a departure from the known, a transformation of traditional activities through new methods and techniques, and most important of all, a recognition on the part of professional physical educators that the need for change is constant.

A Test Battery for Evaluating Golf Skills[1]

H. STEVEN BROWN
Southern Methodist University

Many physical educators teach the fundamentals of golf in situations in which it is not feasible to test the skills of their students on a golf course. The literature contains numerous references to tests which measure various aspects of golfing skills, but a number of these have not been tested for their reliability or validity, nor are achievement scales available. It was the purpose of the investigator to develop an acceptable test battery with achievement scales which would both motivate and effectively evaluate the members of his classes.

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[1] Tables, bibliography, and appendices may be obtained from the author upon request.

Procedure

The investigator taught coeducational golf classes which met twice a week for periods of one hour and twenty minutes each. Classes were open to all students; the majority of students enrolled in the classes were classified as beginning golfers. The data used in this report were taken from these classes rather than from a random sample.

The test items which make up the battery presented in this report were used initially to motivate the students. Since the scores tended to reflect the instructor's estimation of the golfers' abilities and were accepted as fair evaluating devices by them, they were used for that purpose. The distances and number of shots were altered from time to time. Despite the fact that some of the test events have been used for more than fifteen years, the five items of this battery have been in use for only three. They are a chip test, approach test, driving test, short pitch test, and putting test; a detailed account of each is carried in Appendix I.

The class procedure generally followed was to teach the grip, stance, and basic elements of the full-swing during the first two periods. In the third period, the students were given intensive instruction on the chip shot. During the succeeding days the length of the shots was increased following each test period. The schedule for testing was as follows: chip test on the fourth period, short pitch on the sixth, the approach on the eighth, and the driving test on the tenth. The putting test was administered later in the term following a period of instruction. The students were told that they could repeat any test and that their achievement rating would be based on their best score.

The last half of each semester was spent on the golf course where the class members played as many holes as possible each period. The instructor maintained a teaching station there and worked with those needing help on specific shots. During the last two weeks of the term, the skill tests were repeated for those students who wanted to try to raise their scores.

The reliability and validity correlations were computed using the Pearson product-moment method. The reliability was calculated from test re-test data that were collected during a single class period. The validating criterion was the "Best 9 Score." This was obtained by adding the lowest score made on each of the nine holes by a player.

The data from the classes were used in developing the achievement T scales which were computed by the cumulative frequency technique. Due to the wide variance of the scores made by the men and women, separate T scales were developed for each.

Results and Discussion

The reliability correlations found for the test items were all acceptable with the possible exception of the r .511 ± .059 found for the driving test. This event should be lengthened and given near the end of the course. In most cases the other correlations are higher than those reported by Autrey and Coffey, but lower than those reported by Chui and McKee. However, little is gained from comparing these statistics because of the many differences in the tests. The correlations do support the belief that golfing students can be reliably tested for a given stroke with fewer than the 30 shots recommended by Coffey. The treatment of these data by the Spearman-Brown prophecy formula or the analysis of variance would give more significant statistics.

A validity coefficient of .753 ± .027 was obtained by correlating the summation test battery scores with the "Best 9 Scores" made by 113 students. This is an acceptable level, especially in consideration of the variability of golf play. The correlations for the individual test items are shown in Table II. It will be noted that the women in this investigation had much lower reliability coefficients on the driving test than did the men.

Proficiency Testing for Exemption—The University of Connecticut Version

E. GEORGE VAN BIBBER
University of Connecticut

Like most state colleges and universities, the University of Connecticut has a basic two-year academic program which includes physical education. Our requirement in physical education is for two semesters for both men and women, to be completed as soon as possible after enrollment. Physical education for freshman men aims to increase the appreciation of the value of fitness and of competitive and recreational activities through interpretation and guided participation.

Objectives of the physical education program are:

1. To raise the student's fitness level
2. To teach the fundamentals of recreational activities
3. To give an understanding of the fundamental elements underlying motor performance
4. To present a basic background in the popular sports so that the student may be an intelligent participant as well as an intelligent spectator
5. To teach swimming to those students who cannot swim and to improve the aquatic skills of the average swimmer.

The University of Connecticut requires each male student to have two semesters of physical education for graduation. He is required to enroll continuously in physical education until he has completed the requirement.

> . . . students are required to take work in physical education or the equivalent. Candidates for an undergraduate degree in the School of Physical Education must meet this requirement by the successful completion of Physical Education 105-106 (for men), or either Physical Education 101-102 or Physical Education 103-104 (for women). Students in other undergraduate curricula may meet the requirements either by the successful completion of the courses just named, by participating in organized sports (freshman or varsity), or by participation in the University Marching Band. To meet the requirement in a given semester by participation in a sport or the band, a student must be certified to the Registrar by the person in charge of the sport or band as having fulfilled the participation requirements of the activity during the given semester. When the season for a sport extends over parts of two semesters, only one semester of the requirement can be met by participation in the given sport.
>
> Students may be exempt from the requirement on the basis of their performance on physical proficiency tests. Students who are twenty-four years of age or older at the time they first become subject to the physical education requirement are exempt.
>
> Students must meet the Physical Education requirement at the earliest opportunity and must continue to register for Physical Education courses until the requirement has been completed.

Some time ago, the Curriculum and Courses Committee of the University Senate, which has jurisdiction over all freshman and sophomore courses, indicated to us that we should provide for course requirement examinations in physical education, as is possible in all other subjects. The statement following is the University policy regarding course requirement examinations: "With the permission of the dean of the school or college concerned, any student may meet school or college course requirements by examination without credit, the examination to be given by the department in which the course is offered."

The Curriculum and Courses Committee really charged us with the responsibility of providing an exemption procedure through which students could meet the requirement. Accordingly, we set up a physical fitness test followed by proficiency tests for those who qualify as "physically fit" which, along with other criteria, makes it possible for students to be exempted from the requirement. Basically, the program operates as follows:

Requirements for Exemption in Physical Education 105-106 (men)

To satisfy the Physical Education requirement, you must (1) demonstrate a reasonable degree of physical fitness by earning an average T-score of *285* or more on the University of Connecticut Physical Fitness Test *and* (2) show evidence of proficiency in three sports, one of which must be swimming.

1. Connecticut Physical Fitness Test
   - agility run
   - 380-yard run
   - 30-yard run
   - eyebrow hang, nose bridge level
   - jump and reach
2. Proficiency in Sports

   Team letter or certificate for high school or equivalent participation on teams such as: Baseball, basketball, football, soccer, swimming, wrestling, etc. Carry-over sport such as: Badminton, golf, handball, squash, tennis, etc.

   (a) Selection of Sports

   You are free to elect the sport in which you show evidence of proficiency provided that your selection meets the following criteria:
   The sport you elect must be one in which you may normally be expected to participate after your college career is finished, e.g., golf, tennis, squash, badminton.

   (b) Proficiency Defined

   You can meet the proficiency requirement for most sports by satisfactorily passing a written test covering the rules, strategy of the sport, and by satisfactorily demonstrating the ability to execute the fundamental skills of the sport. You may attempt the proficiency test without having had class instruction in the sports in which you are tested.

   (c) High School Credit

   If while in high school you earned two varsity letters in one or more interscholastic sports, you may receive credit for participation in some of those sports. The proficiency requirements for basketball, football, baseball, or softball, track, golf, swimming and tennis, may be met by submitting to the Physical Education Office a certificate stating that, while in high school, you have lettered in one or more of the above sports. This certificate must be signed by your high school principal or coach in order to receive credit.

Over a period of several years we have felt that the physical proficiency testing program for exemption has been a good thing. It has made it possible for us to exempt about 20 percent of our freshman men, thus reducing the size of the total that we are responsible for, reducing the size of the classes for the instructors to handle, and thus improving the quality of teaching.

If we had it all to do over again, I feel sure that we would adopt our present exemption plan, with the exception of that portion having to do with the exemption for "participation in organized sports," "participation in the University Marching Band" or because the student is "twenty-four years of age or older."

Perhaps a program like this is something that you all should consider in case you haven't already done so. We have been happy with it.

Intramural Athletics

The Architecture of Excellence

JOHN STECKBECK
Lehigh University

Building a degree of excellence in our ranks depends upon individual purpose and the pursuit of that purpose to its fullest extent. In an environment of excellence, physical education and its offspring, intramural sports, must stand head and shoulders above the seeking of recreational pleasures to fill leisure time.

Modern universities and colleges are complex organizations of mental and physical activity that have only one element in common, the student. Each discipline strives without mercy to engage the participant. Frequently this is the point of ignition that starts misunderstandings and disagreements. The result is unfortunate for the entire collegiate family.

Historically, intramural sports grew out of a student urge to play, to compete, in a struggle for recognition and participation. It has always been a source of wonder on my part that during its infancy the natural urge to play was not recognized as a part of what should have been an area of excellence. Happily during our time we have seen the collegiate picture change. Physical activity is recognized as a necessary part of student growth; the intramural program has made deep inroads in the campus life. Administration as well as students look for excellence.

Times have changed. Today we have achieved recognition and the type of programs that aid and complement each other. In this kind of environment, we find the personal reason why each responsible individual strives for intramural excellence. Building excellence is not the lot of every individual responsible for intramural program. Some are destined by virtue of enthusiasm and dedication to achieve excellence. Others, because of attitude and despite impeccable qualifications, will not be successful. Problems both groups will encounter will or will not be solved. Why? Because at the moment of encounter, one will fulfill the requirements and the other will not. Here is the moment of truth. One will continue to achieve, the other will not, because of poor attitudes. Here is the weakness of our profession.

What are the ingredients of excellence? Some of them are: organizational ability, enthusiasm, dedication, preparation, understanding, and work.

Organizational Ability. Here is something indispensible to success. This is the ability to gather together all the component elements and mold them into a satisfactory playing situation—the situation designed to do the greatest good for the greatest number. Intramurals struggle for their place in the sun. In this area of struggle for recognition, all of the organizational ingenuity that one can muster is put into play. The expanding student population alone taxes every available playing area and calls for organizational ability of the highest type. Spontaneous interest for something not in the program calls for research and reevaluation of the entire program. Additions and deletions must be constantly made to serve the increasing demands of the total campus population.

Here is an example of organizational talent put to work. At Lehigh University some 80 young men assist in the 6-week training period in wrestling. Each does just a bit more than is required and as a result about 65 percent of the student body is involved on a voluntary basis either as a worker or a competitor. Track and field has been developed over a period of years so that now it reaches almost every student. The idea is not only to attract numbers but to vitally interest the student. When he indicates an interest, this begins a long chain of events designed to eventually give him the greatest satisfaction and enjoyment in his participation.

Enthusiasm. Coupled with organizational ability is another ingredient of excellence, enthusiasm—the kind of enthusiasm that is contagious, lively, eager interest in all phases of intramural activity. Intramural programs often fall short of excellence because individuals who have been assigned the responsibility are lacking in enthusiasm. Lack of enthusiasm can seriously cripple any spontaneity generated by the students.

In this day of expanding programs, intramural departments are strengthened by support from the administration. Qualified directors are appointed to conduct the affairs of the department. Interest and enthusiasm spill over into the program. A program that is directed by an enthusiastic individual usually is a fine one. However enthusiasm can be overworked, so that a program may die because students become leery about being pushed into an activity in which they are not interested.

Dedication. To achieve success, the leader must be dedicated to his work. Of all the ingredients, dedication and unselfish giving of one's self come closest to the accomplishment of excellence. So often dedication is confused with time. Long hours of work can be spent and yet nothing be accomplished. Dedication means more than time. It means the best possible approach to the local requirement for activity. It means helping the student find an outlet for his physical needs. It means choosing the best equipment, the careful use of time, the greatest use of facilities, and finally the student and his future.

Preparation. Today more men are entering the world of physical education fully prepared to conduct the affairs according to local standards. Faculty status, academic encouragement, freedom to grow are all encouraging to the individual. Naturally, the best men for intramurals are men trained in the field of physical education. With the formal part of their professional life behind them, they enter the field. Why do some fail? One or more of the necessary ingredients of excellence is absent.

Understanding. Ever-increasing expansion on our college and university campuses often leaves the intramural director "out in the cold." Priority is given to the academic disciplines, buildings, new equipment, additional staff, etc. We wonder sometimes where we fit in the picture.

Directors can make definite efforts to do some research in their area. Facts, figures, charts, actual reports of long range proposals for improvement—all will help bring to the planners an understanding of their problems. Many times this act of understanding substantiated by valid research reports leads to increased support and recognition of competency.

Work. For one to think that a program will operate itself is folly. The conduct of any program reflects the nature of the director. The final success of purpose depends on working towards the goal.

Development and Progress of the National College Touch Football Rules

RODNEY J. GRAMBEAU
University of Michigan

The first germ of the idea for developing the rules for touch football came from a group discussion as a part of a workshop on intramurals at the 54th annual meeting of the CPEA in Philadelphia, Pennsylvania in 1950.

At this workshop the results of a study concerned with injuries in touch football were presented. The study brought out the fact that there was a wide variation of rules throughout the country. It also showed that there was inadequate field supervision, that in general there was poor officiating, that games were being played on improper facilities, and that there was a high percentage of injuries.

From a discussion of this study a motion was made and unanimously carried that the chairman of the intramural section appoint a committee to make a detailed study of touch football rules in colleges and universities throughout the United States. The committee was also charged with the responsibility of investigating the injury rate as associated with specific rules. Using results from this study, an attempt was to be made to standardize the game as much as possible through the development of a set of touch football rules.

Acting on the motion, Lloyd Olds, chairman of the Department of Physical Education at Michigan State Normal College (now Eastern Michigan University) and chairman-elect of the Intramural Section, appointed a committee consisting of A. H. Rhoads, Ohio University; Rod Grambeau, University of Michigan; Victor Moore, Kent State University; Eugene Hill, Illinois State Normal; and Kooman Boycheff, University of Chicago, with Rhoads as chairman.

The committee met for the first time in Detroit in the spring of 1951. They selected the name of the game to be National College Touch Football and established the following two objectives:

1. To sponsor a game for class and intramural play in colleges and universities as nearly like NCAA football as possible, with modifications and changes necessary for obvious safety reasons.
2. To establish rules acceptable to all colleges and universities so the pattern of play will be the same in touch football as in all other sports.

The committee authorized the chairman to develop a set of proposed rules using all information available from previous studies.

Development of First Set of Rules

A set of rules was developed by A. H. Rhoads, approved by the committee, and submitted to 165 colleges with the request that they be used for a season. A questionnaire was enclosed that would indicate their reaction to the new rules, as well as suggestions for improvement. Results from the questionnaire were very gratifying and at the CPEA meeting in December 1952 formal arrangements were made through the then president of the CPEA F. J. Holter, West Virginia University, for the publication of the rules by the Athletic Institute.

The first printing consisted of 2,000 copies, of which about one half were sold in the first year and a half. In June 1955 the Athletic Institute submitted a statement showing printing costs and handling charges exceeding receipts by $13.32. In a subsequent letter in October 1955, additional figures showed the first printing depleted with a net profit of $160.05 to the CPEA. This letter also indicated that there were a few bad accounts, some complimentary giveaways (promotion), and some loss due to pilfering at various conventions. Additionally, most copies were sold at discount prices. The cost of this first printing was 50¢ per copy.

In a report to the December 1955 meeting of the intramural section of the CPEA Mr. Rhoads, chairman and editor made the following recommendations:

1. The appointment of a new chairman and editor for 1956.

2. The retainment or appointment of committees and subcommittees on a sectional basis.

3. The empowering of the new chairman and editor and the committee with the responsibility of revising the rulebook for publication and distribution in 1956 on a nonprofit basis.

Results of the project to that date were summarized as follows:

1. A national game used in colleges and universities throughout the United States, the territories, and Canada has been established.

2 Greater participation, knowledge of the rules, appreciation and respect for the game has occurred since publication.

3. As a result of the publication and the committee members intensified study of injury rates, playing conditions, etc., intramural directors in many colleges and universities have become conscious of the importance of a knowledge of basic rules, officiating, adequate field supervision, leadership, and safety factors.

4. And lastly, there has been a significant decrease in the injury rate as supported by *A Survey of Accidents to College Students* conducted and published by the American College Health Association and the National Safety Council in 1955.

In accordance with the recommendations, Howard Ryan, McGill University, 1956 chairman of the Intramural Section, appointed Rodney J. Grambeau, University of Michigan, as the new chairman and editor. At the recommendation of the committee, Mr. Grambeau requested the Athletic Institute to reprint 1,000 copies of the original rules, with a few minor editorial and committee changes which would allow the committee adequate time to prepare a revision.

First Revision

Through the efforts of the committee and the cooperation of the Athletic Institute a revised edition was published in 1958, with 4,000 copies printed at that time. The price of the rulebook was increased to 75¢ per copy, due to increased publication cost. *Handbook* was dropped from the name and numerous editorial changes were made, including new sections on a summary of penalities, duties of officials, and a code of signals.

By 1961 the second edition printing of 4,000 copies had been sold and a reprint of another 4,000 copies was authorized. In the interim the chairman and the members of the committee had been working on another revision.

Second Revision

By 1963 the reprint of the second edition had been exhausted and another revised edition was published with 10,000 copies printed. In this revision *College* was dropped from the title, making it *Official National Touch Football Rules*. The reason for this was that the rulebook was now being used by many additional groups such as army, navy, recreation groups, etc. Numerous other editorial changes were made.

Current Status

Although the final summary for 1965 has not as yet been received it can be conservatively estimated that approximately 3,000 copies will have been sold. Over a 13-year period this will amount to a profit to the NCPEAM of approximately $2,500 from the publication of 22,000 touch football rulebooks.

As chairman and editor of the rules I was asked by the United States Army to conduct touch football officiating clinics in France and Germany during the latter part of July and the month of August this year. The national touch football rules are used by the Army in Europe and were used by me in conducting these clinics in Orleans and Verdun, France, and in Mannheim, Kaiserslautern, Hanau, Nurnberg, Munich, and Stuttgart, Germany. In addition I visited Berlin and Garmisch, where I taped radio broadcasts on touch football officiating for the Armed Forces Radio.

Future Plans

In a letter from Theodore Bank of the Athletic Institute on September 28, 1965 he indicated that he has approximately 3,000 copies of the rulebook on hand, which is about one year's sales.

There has been considerable discussion with members of the committee and also Mr. Bank on the possibility of the next revision being a combined touch football and flag football rulebook. There are many advantages to this—the standardization of both games, the reaching of a much larger audience, increased sales with increased profits, and from a professional standpoint, the fulfilling of a need for publishing flag football rules. The only disadvantages that are apparent are the additional work necessary to prepare such a revision and that the cost per copy would probably have to be increased to one dollar.

In closing I would like to make the following suggestions to the Intramural Section of the NCPEAM:

1. That the *Official National Touch Football Rules* be revised and that the revision be a combined touch and flag football rulebook.
2. That an attempt be made through the NCPEAM to get all colleges and universities throughout the United States to obtain and use these rules, with local modifications.
3. That a committee be selected to investigate and make recommendations concerning the future use of profits which accrue from the revision of the touch football rules. I wourld like to suggest, as one possibility, the establishment of a scholarship fund for research in the area of intramurals.

Intramural Sports Courses in Selected Institutions of Higher Education

DONALD LEE CABLE
Luther Jackson Intermediate School

The purpose of this study was to determine the general nature and status of intramural sports courses in selected public higher education institutions in the United States, and to suggest standards by which these and future intramural sports courses might be evaluated by the teacher and department head.

Two hundred and eighty-eight public higher education institutions that offer a major in health, physical education, and recreation were contacted using the normative survey (mail questionnaire) method of data collection. The list of schools was obtained by contacting state education departments and physical education leaders in each state. The literature was reviewed relating to the area of intramurals, the evolving professional preparation curriculum in physical education, standards and guides for professional program evaluation, and research methodology and questionnaire construction. This review provided the background for constructing the response form, evaluating the submitted data, and formulating the recommended standards.

Two hundred and thirty-one (80.2 percent) of the 288 institutions replied. It was found that 79 (34.2 percent) of the replying institutions had specialized intramural sports courses. The data submitted by the course instructors were summarized and will be described by giving the frequencies, ranges, averages, percentages, and ranks of the responses. The data were also analyzed using the chi square technique for determining the significance of the frequencies reported. The .05 level of confidence was set for rejection of the null hypothesis. Significant research findings and curriculum standards and guides suggested by professional educational bodies were used to establish the 15 standards for use in evaluating intramural sports courses.

The instructor's professorial ranks were: associate (27.8 percent), assistant (20.2 percent), professor (19 percent), instructor (15.2 percent), with 17.7 percent not responding. The investigator was able to compare the ranks of the instructors of 55 of the 79 intramural sports courses with the ranks of all teachers in these same 55 institutions. The percentages of the 55 course instructors holding each rank were compared directly with the percentages holding each rank for all teachers in these same 55 institutions, using chi square with the correction for use of percentage figures. The null hypothesis was accepted—there was in fact no difference between the ranks of the intramural course instructors and other teachers throughout the institution. This comparison sheds favorable light on the status and quality of the course instructors and indicates that as a group, they met the recommendation for all professional personnel made by the American Association for Health, Physical Education, and Recreation that "The course instructor's rank, earned degrees, experience background, salary, and conditions of work should compare favorably with other faculty members carrying work of comparable level in the institution."

Most of the courses in the following listing were considered as a junior, senior, or graduate level offering.

Year Level Available	*Number*	*Percent*	*Rank*
Freshman	7	9.0	5
Sophomore	15	19.0	4
Junior	41	51.9	1
Senior	35	44.3	2
Graduate	30	38.0	3

The Jackson's Mill Conference has recommended that the major portion of the freshman and sophomore years be devoted to instruction and experience in the area of general education, and it would seem that the conditions that existed in regard to the intramural sports courses were in accord with this recommendation. The goal of professional education is to produce cultured citizens as well as competent teachers and students should be free during their early college years to fulfill this objective.

The first intramural sports course, of those studied, was begun at Michigan State University in 1925, and there has been an overall steady increase in the number of courses begun in every 5-year period since then. Almost half of the present courses have been initiated since 1955. A slight majority (54.4 percent) of the courses were offered on an elective basis, while a little more than 40 percent were a required part of the teacher training curriculum.

The average amount of credit given for semester hour courses was found to be 2.3. The different amounts of credit granted were three, two, and one semester hours with frequencies of 17, 33, and 3, respectively. These frequencies represented a difference significant at the .01 level of confidence. The frequencies for the three (17) and two (33) hour credit amounts were also found to differ significantly at the .05 level. The categories of credit for quarter hour courses were described and analyzed in similar fashion and a difference significant at the .02 level was found. The categories were four, three, and two quarter hours with frequencies of 2, 14, and 8, respectively. There was, however, no significant difference (actual P = .30) between the three (14) and two (8) hour quarters' credit. The numerical average of credit for quarter courses was 2.8.

Fifty-two semester courses met for an average of 2.3 hours per week. The different amounts of meeting time, in hours per week, were four, three, two, and one with frequencies of 1, 16, 32, and 3, respectively. Analysis of the frequencies gave a chi square value significant at the .001 level. A chi square check on the observed frequencies of the three (16) and two (32) hour meeting times indicated a difference significant at the .05 level. Quarter hour courses met for four, three, and two hours per week with respective frequencies of 2, 16, and 6. These frequencies exhibit a difference significant at the .02 level in the direction of the three hour per week meeting time. The average for quarter courses was 3.2 hours.

The American Association for Health, Physical Education, and Recreation and the Jackson's Mill Conference have both mentioned the importance of and need for laboratory experiences in all professional educational courses as an essential part of the preparation of physical education teachers. The research findings indicated that practical work experience was a required part of a significant majority of the courses. This item was mentioned as a principal learning activity by 49 of the instructors. This number is significant at the .05 level. Forty-four of the instructors indicated the amount of time the students put in. The time requirement was expressed in hours per week. For all 53 courses on the semester plan, the average was 1.3 hours. Thirty-three of the courses on the semester schedule required practical work for an average of 2 hours, while 20 of the courses did not require any laboratory experience. The 24 courses on the quarter plan required an average of 1 hour work per week. Fifteen of these did not require any work, and the average for the 9 that did was 2.6 hours. The semester hour courses required amounts of time that fell into five categories; these were 1, 2, 3, 4, and 6 hours with frequencies of 15, 10, 4, 2, and 2, respectively. A chi square value of 25.6 yielded significance at the .001 level. The difference was in the frequencies for the one (15) and two (10) hour categories; however, a chi square test yielded no significant difference (P=.50) between these two groups. The time amounts required by the quarter hour courses also fell into five categories; one, two, three, four, and five hours with the frequencies being 2, 3, 2, 1, and 1, respectively. There was, however, no significant difference (P=.80) between these frequencies.

Fifty-three of the courses were coeducational and the remaining one-third were male classes. The 1962 Professional Preparation Conference report stated that "Coeducational experiences are highly desirable in the professional preparation program. Practically all aspects of the specialized professional program, except courses involving activities unique for either sex, should be coeducational to avoid proliferation and to utilize the best competencies of the total staff."

Since the investigator did not obtain data on whether or not the professional preparation program at each institution was coeducational, it cannot be determined in what surroundings the 26 male courses were offered. However, the fact that 53 courses were offered on a coeducational basis is sufficient evidence to indicate a significant difference, at the .01 level, in the direction of coeducational courses. Class size ranged from 9 to 58 with the average being 24.9. Male classes tended to be larger (29.8 average) than coeducational classes (22.5 average). Courses had a total enrollment of 1,967 (1,670 males and 297 females).

Less than one-third of the courses had any prerequisites. There was a significant difference (P=.01) found among the choices indicating which educational levels the instructors prepared the student for. The individual categories were then checked to determine if any exhibited a significant frequency of choice. One hundred percent of the courses prepared the prospective teachers for the high school level, and only slightly fewer, 94.9 percent, for the junior high. Fifty-nine (74.7 percent) of the instructors prepared the students for the college level, a frequency that is significant at the .01 level of confidence. Elementary level preparation was offered in only 47 (59.9 percent) of the courses. This frequency was rejected at the .05 level. Half of the instructors prepared the students for all of these levels.

The intramural sports course instructors indicated that their courses contributed (a) theoretical knowledge of the area of intramurals, and skills necessary for program administration (36.7 percent of the instructors); (b) practical experience (17.7 percent); and (c) a strong philosophy of the role of intramurals in the total school program as sports for all (15.2 percent) to the educational development of the students. Furthermore, the instructors indicated that the educational purposes of the intramural sports course could not be achieved by other courses because of (a) the time needed to devote to the details of intramural administration (26.6 percent); (b) the need for a laboratory experience in intramurals (12.7 percent); and (c) the fact that a director of intramurals should be prepared, selected, and held responsible the same as any other director, supervisor, or coach (15.2 percent). The instructors also noted such course weaknesses as (a) not having any, or not having enough required practical work experience in a public school or college intramural program (30.4 percent); (b) not having enough class time allotted to cover the necessary material (19.0 percent); and (c) the poor caliber, or improper educational level of the laboratory program which does not foster a desirable practical experience (10.1 percent).

The "Evaluation Schedules in Physical Education" recommended that all members of the professional preparation teaching staff have a masters or doctors degree, and with only one exception, this was found to be true of the intramural sports course instructors. Almost 30 percent of the course leaders had a doctoral degree in health, physical education, and recreation only, or in conjunction with another field. Slightly over 70 percent had masters degrees in these same fields as their highest degree.

The instructors have been teaching for an average of 18.7 years with a range of from 2 to 47. On the average, 15.6 of these years were on the college level, 2.7 on the secondary level, and only .4 years teaching experience in elementary schools. Only 11 of the course leaders have had elementary school teaching experience. Considerably more have had experience on the secondary school level, but still not a significant number when analyzed by chi square. Forty-three have had such experience and 36 have not—the null hypothesis was therefore accepted at the .05 level. However, the American Association for Health, Physical Education, and Recreation has recommended that teachers of special methods courses should have at least had experience at the same level as that for which students are being prepared to teach. It has been shown earlier that the course instructors indicated a definite preference for preparing teachers for the secondary level. The professors have had, on the average, 12.8 years experience directing intramural programs and 9.4 years of coaching duties. The average instructor has taught the courses being surveyed, or a similar course at another institution, for 9.8 years. The course teaching experience ranged from zero to 41 years.

Methods of presenting the courses were:

Method	*Number*	*Percent*	*Rank*
Lecture	79	100.0	1
Discussion	76	96.2	2
Committee work	47	59.5	3
Case study method	16	20.2	4
Seminar	11	13.9	5

Sixty-five (82.3 percent) of the professors utilized one or more methods of presentation in addition to both the lecture and discussion. When this characteristic was analyzed using chi square, it was found to be significant at the .001 level.

Seven items were considered as principal learning activities in over half of the classes. With their percentage of use in parenthesis, these were as follows: (a) tests and examinations (88.6); (b) individual projects (72.2); (c) written reports (70.9); (d) assigned readings (65.8); (e) practical work experience in an intramural program (62.0); (f) oral reports (57.0); and (g) term papers (53.2). These seven learning activities were also ranked as the top seven in terms of the instructor's responses regarding the weight each had toward the final grade, and their frequency of choice as one of the three most important learning activities. The rank order did, however, change slightly from one category (i.e., use, weight, importance) to another. The use of tests and exams was ranked first in terms of frequency of use and weight toward the final grade. Practical work experience, which was ranked fifth in terms of frequency of use, moved up to second when consideration was given its weight toward the final grade, and first in terms of its frequency of choice as one of the three most important learning activities. Five of the learning activities listed above (a-e) were all found to be used, significant at the .05 or greater level of confidence.

At least 16 major topics were covered in at least 83.5 percent of the courses. Two-fifths of the teachers covered all of these topics in their class. Chi square analysis of the frequencies found indicated that while each topic was covered by a significant number (P=.001), there was no significant difference (P=.99) within the group of topics.

Course text and supplemental materials were:

Authors of Resource	Used as Text		Used as Supplement		Total Use	
	Number	Percent	Number	Percent	Number	Percent
Mueller & Mitchell, 1960	43	54.4	11	13.9	54	68.4
Louis Means, 1963	20	25.3	38	48.1	58	73.4
Leavitt & Price, 1958	8	10.1	32	40.5	40	50.6
Intramural handbooks	2	2.5	43	54.4	45	57.0
Journal of Health, Physical Education, Recreation	2	2.5	28	35.4	30	38.0
Beeman & Humphrey, 1960	5	6.3	16	20.2	21	26.8
Mitchell, 1939	2	2.5	20	25.3	22	27.8
Kleindienst & Weston, 1964	3	3.8	17	21.5	20	25.3
N.I.A. Conference *Proceedings*	3	3.8	12	15.2	15	19.0
Voltmer & Lapp, 1949	1	1.3	16	20.2	17	21.5

At least 68 of the instructors utilized one or more of the resources listed above as a primary text for their course. Eleven instructors did not indicate that they used a text—some merely indicated all sources as supplemental and some checked a source as being used, but did not indicate whether it was a text or supplemental material. However, two categories of using (68) or not using (11) a text when analyzed by chi square showed a difference significant at the .001 level. The null hypothesis was rejected and there is considered to be a definite use of textbooks. The relative importance of each resource was determined by multiplying the number of times it was indicated as a text by two, adding this to the number of times it was designated as supplemental material, and ranking the items from one (most important) to ten. The two to one ratio is an arbitrary standard adopted by the investigator in the belief that use as a text is more important than use as recommended supplementary material. Based on this scoring plan the Mueller and Mitchell book received the highest total. It was used as a text in 43 classes and as supplemental material in 11. This gave the book a total of 97 ponits. Means' book was used as a text in 20 classes and supplementary material in another 38 for a total point value of 78. The Leavitt and Price book received a total of 48 points for being selected as a text in 8 classes and additional recommended material in another 32. The use of intramural handbooks as resource material in 43 classes and as a text in 2 gave it a total of 47 points. The scores for other resources the instructors indicated as being used are given in parenthesis in the list the follows: *Journal of Health, Physical Education, Recreation* (32); Beeman and Humphrey, 1960 (26); Mitchell, 1939 (24); Kleindienst and Weston, 1964 (23); National Intramural Association *Proceedings* (18); and Voltmer and Lapp, 1949 (18).

It should be noted that the Mueller and Mitchell and the Means books were the only two indicated by a significant majority of the instructors. The Mueller and Mitchell book was named as text or supplemental material by 54 ($P = .001$) of the instructors and the Means book by 58 ($P = .001$).

Audiovisual aids were used in only a very slight majority (50.6 percent) of the courses. Program films, slides, overhead projector, sport movies, handbooks, posters, bulletin boards, point system records, publicity releases, and administrative and tournament charts are examples of the types of materials used.

Although the research findings indicated no significant use of audiovisual aids it is important to note that the Jackson's Mill Conference has suggested the use of ". . . assets both human and material available in the institution and in the community which should be utilized in the professional preparation of physical education teachers."

Only one-fourth of the instructors indicated that they planned their course with the aid of others such as students, other faculty members, or student-faculty committees. However, over two-thirds of the instructors did utilize students, staff, or alumni to help in continually evaluating their course. This latter factor then was determined to be a significant characteristic of the intramural sports courses. This is desirable in that the Jackson's Mill Conference recommended that provision should be made for continuous and cooperative study of student needs, of changing aspects in the field, and of evaluation by staff, students, and graduates, and that such studies should create continuous curriculum and course revision.

Based on the research findings and suggestions from professional bodies, this investigator recommends fifteen standards that all instructors and sponsoring institutions should attempt to meet in order to improve the quality of intramural sports course instruction. These standards are as follows:

1. The course instructor's rank, earned degrees, experience background, salary, and conditions of work should compare favorably with other faculty members carrying work of comparable level.
2. The instuctor should have a masters or doctors degree.
3. The instructor should have had teaching experience on the secondary school level.
4. The manner of course presentation should include lecture, class discussion, and at least one other widely accepted method. (Present [1965] evidence indicates that the following, in descending order, are the most prevalently used: committee work, case study method, and seminar.)
5. The course should include as a minimum the following learning activities: (a) individual projects and written reports; (b) practical experience working on an intramural program; (c) assigned readings; and (d) tests and examinations.
6. Students taking an intramural sports course should spend an average of 2 hours per week for a semester course or 2.5 hours per week for a quarter course doing practical work on an ongoing intramural program.
7. Audiovisual and instructional aids should be utilized in the presentation of the course.
8. The course should cover, as a minimum, the following important topics:
    - facilities and equipment
    - objectives of intramurals

- units of competition
- program of activities
- philosophy and history of intramurals
- publicity and public relations
- scheduling activities
- point systems and awards
- health and physical welfare of participants
- rules and regulations
- finance
- time allotment
- program evaluation
- administrative principles
- extramurals, and
- problems peculiar to different size schools.

9. A recognized widely acceptable resource should be used as the course's primary text. (Present [1965] evidence indicates that the books authored by Mueller and Mitchell, 1960; and Louis Means, 1963, are the most significantly used resources. Other widely used resource materials are Leavitt and Price, 1958; and institutional intramural handbooks.)

10. The course should be offered at the junior-senior-graduate level.

11. The course credit should equal or exceed two semester or three quarter hours.

12. A semester or quarter course should meet for a minimum of two or three clock hours per week, respectively.

13. The course should prepare the prospective teachers for intramural administration on the junior and senior high school and college levels.

14. The course should be continuously and cooperatively evaluated.

15. The course should be available on a coeducational basis except where the entire major program is confined to one sex.

Research

Oxygen Debt and Efficiency Relationships Following Treadmill Running[1]

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Oxygen debt and efficiency have been studied extensively in exercise physiology. Margaria and Edwards, and Knehr, Dill, and Neufeld have demonstrated that by working anaerobically and running at maximal levels, the amount of work one can perform is in proportion to the size of the oxygen debt contracted. However, Christensen and Hogberg have shown that anaerobic work is only 50 percent as efficient as aerobic work. In terms of maximal performance, efficiency is sacrificed when performing heavy work tasks.

In examining the process of training for a given skill or task, it is generally accepted that efficiency of performance is improved as a result of training. This has been demonstrated in treadmill walking and running by Knehr and others and Dill and others, respectively. Furthermore, it has been suggested by Henry and Berg that changes in oxygen debt as a consequence of training give a better indication of improvement in physical condition than performance tests do.

In view of this past research, this study examined both oxygen debt and efficiency changes in the performance of one athlete as he trained on a motor-driven treadmill with the work load held constant over an extended period of time.

Subject and Method

One male athlete, age 21, weighting 200 pounds (90.9 kg) was selected for study. The subject, enrolled at the University of Massachusetts, enjoyed an excellent health state, and was well motivated to run.

The subject reported to the laboratory three times per week on alternate days at approximately the same time of day. However, he did not run during vacation periods or when ill. The duration of exercise was 10 minutes at a constant speed of 10 kilometers (6 miles) per hour with the incline raised to 6 percent. Speed and incline were selected after reviewing the findings of Ricci and Margaria. The purpose of choosing the duration and degree of work was to select a task of sufficient intensity to allow the subject to work at a submaximal steady state level and to contract a sizable oxygen debt, yet not become exhausted.

The open circuit method of indirect calorimetry was employed for study. The subject inhaled atmospheric air through a one way Collins J valve, and the air was expelled into a Douglas bag (200 liter capacity). Work and recovery (20-minutes) values were measured at 2-minute intervals so as to obtain the total oxygen consumed for these two periods and to note changes in the subject's work and recovery patterns. Each sample was analyzed by the Beckman Carbon Dioxide Analyzer (Model LB1) and Beckman Oxygen Gas Analyzer (Model F3) in order to determine respective percentages of carbon dioxide and oxygen. Before every analysis, both apparatuses were "washed" with nitrogen in order to prevent contamination of samples. All gas volumes were corrected to STPD.

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[1] Bibliography and table may be obtained from the author upon request.

Prior to each exercise, the subject was asked to evaluate subjectively how he felt toward running, and his remarks were recorded. This information was to be used to explain possible distortions in the collected data or if the results differed significantly from the subject's normal pattern. No attempt was made to curtail the subject's caloric intake or outside physical activity.

Oxygen debt was determined by measuring the total amount of oxygen consumed during the 20-minute recovery period, and subtracting from this value the amount of oxygen which would have normally been consumed if the subject had remained at rest.

Gross efficiency was calculated by using the following formula:

$$\text{Gross efficiency} = \frac{\text{External work accomplished (kilocal)}}{\text{Gross energy used (kilocal)}} \times 100$$

The subject's external work was obtained by measuring only the vertical distance covered. This value was measured on the basis that running on an incline of 6 percent, the runner travelled 6 feet vertically for every 100 feet covered horizontally. In all calculations, a respiratory quotient of 1 was assumed.

Results and Discussion

The results of this study show an inverse relationship between changes in oxygen debt and gross efficiency of one subject as a function of training. This relationship was correlated ($r = -.56$) to be significant beyond the .02 level of confidence, indicating that as the debt was lowered, efficiency of performance increased.

The largest oxygen debt was recorded at the outset of training. This debt of 6.81 liters corresponded to an efficiency of 10 percent which was also the subject's poorest response. The subject's most efficient response, 11.89 percent, was observed one month after the initial run. This corresponded to a debt of 3.90 liters, slightly higher than the lowest recorded debt of 3.42 liters, which was observed seven weeks after the initial run.

Oxygen debt values reached a plateau after two months of training. However, as the training sessions were spaced farther apart, variations in both oxygen debt and efficiency occurred resulting in a more inconsistent pattern as compared to performances earlier in the training program. Apparently, this runner's response was more consistent when he adhered to a stricter training schedule.

It is important to consider that the subject was classified in excellent physical condition prior to the beginning of the training program. This is evidenced by the fact that he could maintain a steady state of oxygen uptake in excess of 4 liters per minute even though he was not accustomed to treadmill running. Consequently, the degree of change in both oxygen debt and efficiency was slight, but significant enough to show the beneficial effects of training for this specific work task.

The reported values for gross efficiency of running (10-12 percent) are well below those reported by Karpovich, which were in the vicinity of 35 percent. However, these values were recorded while the subject ran on the level. In this study, the subject performed on a vertical incline of 6 percent and was working over a duration of 10 minutes. Secondly, and probably the prime reason for such low values of work efficiency was that no attempt was made to account for the external work accomplished along the horizontal vector of locomotion. This consideration would undoubtedly raise the efficiency level of this particular running experiment.

Of particular interest in the study of this runner was the fact that vacation periods that varied from one to two weeks did not hinder the subject's training pattern. This is evidenced by the fact that on three occasions the subject performed more efficiently following a lay off from the treadmill run. However, as stated previously, no attempt was made to control the subject's outside activity, and this factor may have had a bearing on his performance when resuming the training schedule. Nevertheless, the subject did not perform the specific task of treadmill running during the vacation periods.

The results, in general show the benefits of training for a specific work task in terms of improved efficiency of the physiological mechanisms associated with exercise. Further insight into physical activity can be gained by studying the variables of oxygen debt and efficiency under varying exercise conditions, as well as utilizing subjects of differing capacities for physical activity.

Summary

The relationship of oxygen debt and efficiency was studied in one subject as he trained on a motor-driven treadmill—the duration was 10 minutes at a constant speed of 10 kilometers per hour with the incline raised to 6 percent. An inverse relationship between oxygen debt and efficiency resulted, indicating that as efficiency of performance increased, the oxygen debt decreased. Greatest improvement in performance (2 percent) occurred within two months of training. Vacation periods or lay offs did not hinder the training pattern of the subjects.

Effects of Exercise Conditioning on Heart Rate and Blood Pressure of Aged Females[1]

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A great deal of information, some contradictory, has been published concerning the comparatively new science of geriatrics. Relatively few research studies, however, have been conducted to indicate the effects of an exercise training program on the aged person.

Purpose of the Study

This study was conducted to determine the effects of an exercise training program upon resting pulse rate and blood pressure as well as heart rate and blood pressure responses to mild exercise of aged females.

Review of Literature

Master reports that "as early as 1889 and up to 1904 observations were reported showing that systolic blood pressure and heart rate rose during and directly after muscular work and declined later." Astrand, Astrand, and Rodahl, while working with nine 56 to 68-year-old male subjects on a bicycle ergometer found that heart rate increased to an average maximum of

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[1] Bibliography may be obtained from the authors upon request.

163 beats per minute during maximal work loads.

Dawson, working on a bicycle ergometer, found that even though he trained for the testing, relative performance based on the work rate at 41 years of age dropped 52 percent by 71 years of age. He found a decrease in heart rate with increase in age from a maximum of 180 beats per minute at age 53 to a maximum of 140 beats per minute at age 71. Dill, in studies of himself, found that maximal heart rate decreased from 172 beats per minute at age 37 to 160 beats per minute at age 66. Dill concluded that the inability of older men to increase their pulse rate was the limiting factor in lowered oxygen intake of older persons. Robinson concluded that the rate of attainment of maximal heart rate is slower with advancing age and Norris, Shock, and Yiengst, as well as McCurdy and Larson found that older men reached preexercise levels later than do younger men. Horvath and Bender summarized and further interpreted the works of Dill, Robinson, and Astrand.

Fraser and Chapman reported that it was generally agreed that systolic pressure increases during exercise. Norris, Shock, and Yiengst found that older subjects increased their systolic blood pressure levels more after exercise and returned to preexercise levels later than did younger subjects. They reported no age differences in diastolic blood pressure responses to exercise.

Cureton reported in a study of a 59-year-old male that through training, blood pressure and pulse rate were lowered.

Methodology

Subjects. The subjects selected for this study were 12 females from the Asbury Methodist Home for the Aging in Gaithersburg, Maryland. Their ages ranged from 66 to 84 years, with a median age of 73 years. All subjects received the permission of the Home physician to participate in the experiment.

Training Program. The training program was conducted daily for 4 weeks. It consisted of a 1-mile walk followed by a stair climb. Two walking courses were laid out, one outdoors and one indoors. The outdoor course was to be used except for days when the weather was inclement. The mile walks were conducted at 9 o'clock each morning and the time required to complete the walk decreased from 30 minutes on the first 2 days of training to 20 minutes for the last few days' walks. Upon the completion of the 1-mile walk, the subjects were taken on a stair climb which started with 1 flight climbed during the first week of training and progressed to 3 flights climbed by the final week.

Cardiovascular Test. An adaptation of the Master's step test was employed as the exercise task to place a stress on the cardiovascular system of the subjects. Master's original test consisted of a stepping exercise up two 9-inch steps, down two 9-inch steps, turning and repeating for one and one-half minutes. Heart rate and blood pressure measures were recorded for 2 minutes following exercise to determine whether or not preexercise levels had been reached within that time interval. In place of two 9-inch steps as proposed by Master, a set of three 6-inch steps with hand rails were used, and the subjects were required to complete 10 repetitions of the stepping exercise as rapidly as possible. Recovery measures of heart rate and blood pressure were recorded through the fifth minute of recovery.

Measurement Procedure. The recording procedures took place in the following manner. After having been weighed, each subject rested in a chair for 15 to 20 minutes, waiting for her turn. She was then seated near an electrocardiogram. Right and left arm leads to the electrocardiogram were connected and a sphygmomanometer band was placed on the subject to determine the resting heart rate and blood pressure. Repeated electrocardiogram records were taken until agreement was reached for successive trials. Resting systolic and diastolic blood pressure measures were taken during the same period of time.

Prior to exercise the wrist connections were loosened and the sphygmomanometer band was removed. The subject then arose and walked the 3 or 4 paces to the steps. The modified Master's step test was started on the verbal signal "go," and the stop watch was started. As the subject exercised, the repetitions were counted and announced. The subject was instructed to complete the 10 repetitions as rapidly as possible, and in an attempt to eliminate dizziness, to always turn toward the investigator. For safety reasons, the subject was permitted to hold onto the handrails as she exercised.

At the completion of 10 repetitions of the step test, the watch was stopped, and time required to take the step tests was recorded. The stop watch was reset and restarted immediately as the subject walked back to the seat where testing instruments were reconnected. The subject's blood pressure was then taken at the first minute of recovery and was immediately followed by an electrocardiogram recording of 10 R waves at one and one-half minutes of recovery. Blood pressure readings were taken and recorded while wrist leads were being connected for the purpose of recording heart rate. The subject sat quietly as the same recording techniques were employed during the third and fifth minutes of recovery.

Data were collected prior to the commencement of the training program, after 2 weeks of training, and at the termination of the fourth week of training. The above described process of measurement was repeated twice during each of the 3 phases in an attempt to ensure data which were as accurate as possible.

Since each subject served as her own control, a t test for paired variates was employed to test pre-post training differences for heart rate, systolic blood pressure, diastolic blood pressure, and pulse pressure. Comparisons were made for rest and each of 3 post exercise time periods.

Results

Heart Rate. Since previous research has established that training programs reduce heart rate, a one-tailed test was used. For 11 degrees of freedom, each paired t ratio (resting, 1½ minutes postexercise, 3½ minutes postexercise, and 5½ minutes postexercise) was significant at the 5 percent level.

Blood Pressure. Pre-post training differences were noted for systolic blood pressure, diastolic blood pressure, and pulse pressure for resting, 1-minute postexercise, 3-minute postexercise, and 5-minute postexercise time periods. A two-tailed test for significance was employed because of the lack of agreement in the literature for the effects of training on blood pressure. For 11 degrees of freedom, the paired t ratio for 5 minutes postexercise was significant at the 5 percent level for systolic blood pressure; none of the other paired t ratios showed significance.

Discussion and Conclusions

Those who participated in the experiment thoroughly enjoyed themselves. A hikers' club was organized with subjects of his study serving as officers.

The medical records indicated that a majority of the subjects were suffering from arteriosclerosis. Various medications were prescribed for subjects throughout the experiment. The Home physician was pleased with his observed improvement in both physical and mental fitness.

It is difficult to draw conclusions from cardiovascular measurements of heart rate and blood pressure because they are not as stable as desired. It is a well known fact that they vary according to emotional states, age, time of day, body position, temperature, food intake, and medication. The results are discussed within the framework of these limitations.

Training decreased the resting heart rate of these aged females as indicated by the significant paired t ratio. This is in agreement with training effects on younger subjects. This study supports the hypothesis that training improved the cardiovascular recovery process following exercise with the heart rate and systolic blood pressure returning to preexercise levels sooner. This was substantiated by the significant recovery paired t ratio for heart rate and the significant t ratio for systolic blood pressure at 5 minutes postexercise.

An inability to register a marked increase in heart rate following exercise was noted. This supports the findings of Dill Robinson, and Dawson for males.

Immediate response to exercise was determined a total of 36 times with 24 readings showing an increase, 5 with no change and 7 showing a decrease.

Five of the subjects had markedly lower preexercise systolic blood pressure following the training period. The other 7 subjects showed only slight reductions. In all but 1 of the 12 cases, the systolic blood pressure increased consistently immediately following exercise. Recovery of systolic blood pressure to preexercise levels was complete by the fifth minute of recovery for most cases.

Diastolic blood pressure was not significantly altered following a period of training; individual fluctuation was great. This agrees with Simonson's findngs. In 5 cases, slight decreases were noted during each postexercise period, with 6 subjects not changing and 1 subject increasing slightly during each postexercise period.

This study supports the hypothesis that proper training affords a beneficial adjustment of the cardiovascular system, even when the subjects are aged females.

The Predictive Power of Coordination and Balance Items in Estimating Intellectual Achievement[1]

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Purdue University

Body and mind are never independent. Such subdivision is entirely arbitrary and unfounded. Although much remains to be learned about the brain and central nervous system, neurologists in general agree that the idea of two lives, somatic and psychic, has outlived its usefulness. The psychosomatic concept of medicine is recognizing the fact and importance of biological integration. Therefore, real education is a motor, an emotional, and a social as well as an intellectual experience.

The theoretical framework of the study[2] is based on the organismic development theory which proposes that the performance of children is related to certain factors which are highly related to the total motor, emotional, social, and intellectual development.

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[1] Bibliography may be obtained from the authors upon request.

[2] This study was supported by a grant from the Indiana State Board of Health No. 1457-62-3619.

Review of Literature

Sloan found close relationships among intelligence, motor behavior, and social maturity. Olson and Hughes reported some success in predicting achievement from a total organismic age score. Klausmeier, on the other hand, suggested that organismic concept adds little to the prediction of academic achievement. Brown, Henderson, and others identified five factors of development which were given the names of intellectual, physical performance, physical growth, physical development, and emotional development. They concluded that physical performance and emotional development factors are the best nonintellectual factors in predicting achievement. In addition, they indicated that further work is needed in order to determine the extent to which nonintellectual factors may be used in the prediction of school performance. In a follow-up study, the same authors found that academic achievement is related to the combination of the intellectual factor with physical growth, physical performance, and emotional factors. In the study, the investigators tried to develop an index to predict academic achievement of 4th grade pupils. The investigators concluded that the findings of the study are not conclusive; however, they are encouraging. Thus, additional support was achieved pertaining to the relationship of nonintellectual variables to academic achievement.

Ismail and others studied the relationship between motor aptitude and intellectual achievement. They concluded that there is no sex difference in pattern of the factor structure pertaining to motor aptitude and intellectual achievement. Furthermore, they concluded that intellectual achievement can be predicted by motor aptitude test items. In addition, they advocated that the classification of children into identifiable subgroups in terms of level of achievement as well as sex tends to increase the power of prediction.

Purpose

This study was conducted to investigate the relative contribution of coordination and balance items in the prediction of intellectual achievement.

Selection of Experimental Subjects

The children involved in the study were obtained from the Muncie and Terre Haute school systems in the state of Indiana. These subjects were supplemented by children from the Lafayette and West Lafayette area in the same state. The experimental subjects were selected according to the following criteria:

1. The Otis IQ scores: The scores on the Otis quick scoring test were used as the main criterion for selection. The children were classified into three different groups according to intelligence: high intelligence, medium intelligence, and low intelligence.
2. Academic achievement scores: Scores on the Stanford Achievement and subtests scores were used to support criterion number 1.
3. Teacher's opinion on intellectual achievement: Both criteria numbers 1 and 2 were supplemented by the teacher's opinion.
4. Grade level: Preadolescent children from the 5th and 6th grades were involved.
5. Sex: Both sexes were adequately represented.
6. Health status: All subjects were in sound physical and mental health. Subjects who exhibited any deviation from normal health and/or physique were excluded.

A total of 211 preadolescent children (122 boys and 89 girls) were involved in the study.

Dependent and Independent Variables

Thirty-six growth and motor aptitude test items were collected and used as the independent variables. The dependent variables were Otis IQ test and the Stanford Academic Achievement and subtests scores (paragraph meaning, word meaning, arithmetic reasoning, arithmetic computation, and the total Stanford Achievement scores).

Statistical Procedures

The Pearson product-moment formula of correlation was utilized in obtaining the correlation coefficients. Furthermore, the Wherry Doolittle method of multiple correlation was used to select the best predictors for the criterion measures. In addition, the F test was applied to differentiate between the different r^2's associated with the regression equations.

Findings

1. There is a significant reduction in r^2 at the .01 level as a result of eliminating coordination items when predicting Otis IQ scores.
2. There is a significant reduction in r^2 at the .01 level as a result of eliminating coordination items when predicting the total Stanford Achievement and subtests scores except for boys and girls relative to arithmetic computation.
3. There is a nonsignificant reduction in r^2 at the .01 level as a result of eliminating balance items in predicting the Otis IQ scores (except for girls, the value of F is significant at the .05 level).
4. There is a nonsignificant reduction in r^2 as a result of eliminating balance items in predicting the Stanford Achievement and subtests scores (except for girls, the values of F relative to arithmetic reasoning and arithmetic computation are significant at the .05 level).
5. There is a significant reduction in r^2 at the .01 level as a result of eliminating both coordination and balance items in predicting IQ scores.
6. There is a significant reduction in r^2 at the .01 level as a result of eliminating both coordination and balance items in predicting the Stanford Achievement and subtests scores (except for boys pertaining to arithmetic computation).

Conclusion

In general, coordination items are the best predictors followed by balance items when estimating either Otis IQ or Stanford Achievement and subtests scores in preadolescent children.

Interlimb Skill Ability in Motor Skill Performance[1]

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There is some disagreement in the field of physical education as to whether athletic skill learning and performance is general or specific. In other words, if an individual excels in one sport or in a particular skill involved in a sport, will he also be outstanding in other physical activities? Recent laboratory research has refuted the notion of a general motor ability. However, many physical educators will not consider the problem resolved until more research utilizing actual game-like skills has been presented.

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[1] Bibliography and tables may be obtained from the author upon request.

It was the intention of this investigation to compare individuals in their performance of arm and leg skills. More specifically, the purpose of this study was

1. to compare throwing skill of the preferred arm with the nonpreferred arm,
2. to compare kicking skill of the preferred leg with the nonpreferred leg, and
3. to compare arm skill to leg skill.

Procedure

The 38 subjects used in this study were male freshmen enrolled in the required physical education program at Ohio State University.

In order to measure arm skill, a 4x4-foot target area was constructed on the wall of the gymnasium. Each subject was required to stand behind a 10-foot restraining line and to throw a softball at the target continuously for 30 seconds. After each subject had been tested with his preferred arm, nonpreferred arms were tested in the same manner.

Leg skill was tested in a similar fashion, with the exception that the 4x4-foot target was taped from the floor upwards on the wall and the projectile employed was a soccer ball. The task required the individual to repetitiously kick the ball at the target with one foot and to stop it when it returned by using one or both feet or legs.

Results, Summary, and Conclusions

Reliability coefficients were obtained from the test-retest method for the skill performance of each limb, with the subjects being tested on succeeding days. These coefficients ranged from .79 to .87.

In order to ascertain intercorrelations among the limb performance, Pearson product-moment r's were calculated and corrected for attenuation. Coefficients of determination (r^2), which indicate the common variance for two variables, were also determined. All correlations were positive, ranging from .15 to .44 for the uncorrected coefficients, and .18 to .54 for those coefficients corrected for attenuation. The Wallace-Snedecor table indicated that an r had to be at least .32 or larger to be significant at the .05 level and .41 or more in order to be significant at the .01 level.

Significances were obtained between preferred arm and nonpreferred arm, preferred leg and nonpreferred leg, nonpreferred leg and preferred arm, nonpreferred arm and nonpreferred leg, and preferred leg and preferred arm. The only r not significant was that yielded when comparing the preferred leg with the nonpreferred arm. Highest significance ($r = .54$) was achieved when comparing the nonpreferred leg with the preferred leg.

The statistic r^2, when multiplied by 100, yields the percentage of variance common to both variables and therefore can be designated as a measure of generality. Arm performance was found to be 19 percent general and 81 percent specific compared to a 29 percent generality and 71 percent specificity for leg performance. The relationship of the preferred arm to the preferred leg was 15 percent general and 85 percent specific, the nonpreferred leg to the preferred arm was 21 percent general and 79 percent specific, and the nonpreferred arm to the nonpreferred leg was 25 percent general and 75 percent specific.

Speed and accuracy in throwing a softball and kicking a soccer ball at 4x4-foot targets were measured on 38 male college freshmen. Data were obtained from preferred and nonpreferred arms and legs.

Intercorrelations yielded a significantly low, positive relationship between the performance of the limbs in five of the six comparisons. However, because of the lack of common variance between any two variables (29 percent was the highest), it appears as if throwing ability and kicking skill are quite specific to the limb involved in the movement. The results of this study serve further to question a theory of general motor ability.

Physical Examinations of Faculty Members in Selected Institutions of Higher Learning[1]

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Temple University

Literature is replete with statements concerning the importance of the health of faculty members. Textbooks dealing with school health devote from a few pages to an entire chapter on this topic. Special study committees and conferences have been held to discuss recommended policies and procedures relative to the health of school personnel. In spite of these efforts, Byrd notes in his discussion of school health administration that this phase of the health program is often neglected. He further contends that in public schools, boards of education and superintendents are responsible for making certain that only healthy teachers are employed.

It is recognized that securing teachers who are physically and mentally fit to meet the demands of teaching is an important process; it is equally important that teachers remain healthy after employment. Support for this position has been given by the Society of State Directors of Health, Physical Education, and Recreation when they stated, "All school personnel should have periodic health examinations." The value of periodic health examinations is discussed in a 1963 publication, *Periodic Health Examinations, Abstracts From the Literature.* This Public Health Service publication contains the results of a search of the literature dealing with health examinations. The following quote from this publication illustrates the value of health examinations: "In a review over the past forty-five years, physicians have found on the physical examination of groups of supposedly well individuals—most of them have been adult males—that from 15 to 45 percent of those examined are found to have significant diseases or defects of which they were unaware." In another study it was stated "Five hundred 'well' executives were examined—half of the executives examined had newly detected diseases that were potentially significant to their health. Treatment was necessary in more than 47 percent of those receiving examinations." This publication also contained information relating to the examination of college personnel. In 1955, the Board of Regents of the University of Michigan authorized periodic faculty health examinations. In 1957, of the 294 subjects examined, 81.3 percent were found to have a total of 465 significant defects which they had not known about. A 1961 study of another occupational group, office workers, revealed that approximately two-thirds of the significantly disabling diseases were diagnosed for the first time by a physician performing a periodic health examination. It seems that the results of these findings attest to the value of periodic physical examinations.

Although there is agreement as to the value of physical examinations, there is a lack of agreement as to who is responsible for requiring them. Two conferences sponsored by the California Teachers Association and the California Medical Association have been held concerning health examinations of school personnel. The first conference convened in 1960 and the second in 1963. It was the feeling of the major portion of the persons attending both conferences that the state department of education should no longer require a physical examination of those applying for a teaching credential. It was their suggestion that each school district should employ a medical consultant to advise and assist in establishing policies and programs which would establish the physical requirements for each teacher for each position within a school district. A word of caution seems advisable in this regard, as such a procedure may prove to be a backward step. As long as the state has minimum requirements it can be assumed at least these requirements will be met. Recognizing that minimums often become maximums when mandated, it is also frequently true that where no requirement exists nothing is done.

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[1] Bibliography and tables may be obtained from the author upon request.

Getting positive action concerning physical examinations is a problem to which no easy solution seems available. [illegible] Abele, in presenting the accomplishments of the Oregon Medical Association [illegible] 10th National Conference on Physicians and Schools in September, 1965 stat[illegible]he problem of required physical examinations for teachers had been broug[illegible]o the attention of the state Medical Society. He further indicated it was one of the more difficult problems faced, and as of that time nothing positive had been accomplished. The preceding examples indicate that the question of physical examinations for school personnel has been and is receiving attention from various groups.

The report of the Joint Committee on Health Problems in Education, *Health Examination of School Personnel*, presents in outline form recommendations relative to a suggested program for school personnel examinations. Reasons for recommending health examinations are stated in a listing of aims which include the following:

1. To protect and promote the health and welfare of school personnel
2. To secure employment of persons physically and emotionally fit
3. To ensure effective, sustained performance
4. To assure early diagnosis and corrections or adjustment of health problems
5. To elicit need for accepted preventative health measures
6. To protect the health and well-being of the school age child
7. To afford opportunity for health education and guidance
8. To serve as a means of screening prospective staff members
9. To teach and to demonstrate by example
10. To ascertain the total health status of the employee.

The foregoing is but a sample of the reports made by the various individuals and groups who have gone on record as recommending or being aware of the need for physical examinations of school personnel. The majority of these comments have been directed toward school personnel working in grades K through 12. Most states have a requirement concerning the health status of persons seeking certification. In addition, many states and school systems have a requirement for a periodic review of the health status of their school personnel. This review may consist of a required physical examination, or a periodic screening for tuberculosis. For example, in Pennsylvania the state code contains the following with reference to the health of school personnel:

> No teacher's certificate shall be granted to any person who has not submitted, upon a blank furnished by the Superintendent of Public Instruction, a certificate from a physician legally qualified to practice medicine in this Commonwealth, setting forth that said applicant is neither mentally nor physically disqualified, by reason of tuberculosis or any other chronic or acute defect, from successful performance of the duties of a teacher.

Another section of the school code contains this quote:

> All teachers, janitors, cooks, and other cafeteria help, and all others employed at schools shall be required to take a preemployment medical examination. Each teacher and other school employee shall be given a chest X-ray by a medical technician every two years. School boards may require a special medical examination for any school employee at any time.

Recommendations concerning physical examinations specifically designed for staff members in institutions of higher learning are reported by the American College Health Association in their *Recommended Standards and Practices for a College Health Program*. This organization states:

> Colleges have a responsibility to promote and maintain the health of their faculty and other staff members. . . . Provision should be made for preemployment and periodic health examinations, for care of work-connected injuries and illness, and for prevention of illness by immunization against preventable disease and by periodic X-ray for tuberculosis.

This writer is in complete agreement with the above recommendations of the American College Health Association. It does not seem consistent to require entrance and periodic physical examinations of students in schools, and colleges, to require teachers in public schools to have periodic examinations, and yet fail to maintain a similar requirement for college and university faculty members. The fact that a faculty member is teaching in an institution of higher learning does not afford him special protection against disease, nor does it eliminate the possibility of his serving as a source of infection for disease. The notion that a required physical examination is an infringement of academic freedom is a poor reason for failing to establish required physical examinations. This question of the faculty's academic freedom can be challenged on the basis of the students' right to be free from exposure to disease, and the right of the student to be taught by instructors who are performing at peak efficiency. Physical examinations for students are justified partly on the grounds that to receive the most from their school experience, a student must be in good health. Using the same logic, faculty members must also be in good health to operate effectively as teachers.

Methodology

How frequently are the recommendations of the American College Health Association for required preemployment and periodic physical examinations met by faculty members in institutions of higher learning in the United States? This question served as incentive to conduct a study to determine the degree of compliance with the Association's recommendations, and in addition to solicit recommendations from persons responsible for health services concerning physical examinations.

A questionnaire was developed and sent to 218 four-year institutions in the United States. Every fifth school offering a minimum of a bachelor's degree listed in the *Report of Credit Given By Educational Institutions*, a publication of the American Association of Collegiate Registrars and Admissions Officers, was selected for inclusion in this study. At least one institution located in each of the 50 states and the District of Columbia was sent a questionnaire.

The questionnaire developed to collect data for this study was composed of four sections. Section I, Institutional Information, was designed to obtain information such as the number of students enrolled, the number of faculty members, degree granted and primary source of financial support. Section II, Preemployment Examinations, was formulated to determine if preemployment physical examinations were required, and if so, who administered the examinations, who paid for the examinations, and of what did the examinations consist? Section III, Periodic Examinations, was constructed to determine present practice relative to requirements for periodic examinations. Section IV, Recommended Procedures for Preemployment and Periodic Examinations, was developed to collect recommendations relative to these physical examinations. Persons completing the questionnaire were requested to complete this section regardless of current practice in their respective institutions.

A total of 113 usable returns were received from the 218 sent. This was a 52 percent reply. Returns from 48 states and the District of Columbia, representing a 96 percent geographical coverage of the United States, were received. Practices in the states of Montana and Nevada are not included in the results of this study since questionnaires were not returned from institutions contacted within these two states.

The following information relative to the type of financial support, number of students and faculty members, is presented to give a clearer view of the diversity of institutions participating in this study.

Sixty-five (58 percent) of the institutions taking part in this study were privately supported, 48 (42 percent) were state supported institutions. The range of enrollment in participating institutions was from 143 to 40,000 students. The number of faculty members in reporting institutions also revealed a wide range. One institution reported a total of 15 faculty members; the largest number reported was 3600. A more detailed breakdown of the number of students and faculty in those colleges and universities replying to the questionnaire is available.

Letters explaining the purpose of the study and questionnaires were addressed to directors of health services. Forty-three (38 percent) of the forms were completed and returned by directors of health services; 24 (21 percent) by the dean of the college; 12 (11 percent) by the president; 9 (8 percent) by the dean of students, 8 (7 percent) by a school nurse; 4 (3 percent) by a vice-president; and one each by an administrative assistant to the director of health services; a business manager; a director of admissions; a director of health, physical education, and recreation; a director of college relations; and a health counselor. Seven persons completing the questionnaire did not indicate their title or position.

The following was obtained by a tabulation of the information reported in section II of the questionnaire. This section was concerned with current practices regarding required preemployment physical examinations. Persons completing the form were asked "Are the results of a preemployment physical examination required of faculty members in your institution?" Nine out of 113 (7.9 percent) answered in the affirmative. Seven of these institutions were state-supported and two were private. One of the 9 reporting that a physical examination was required did not complete that portion of the questionnaire asking for details about the examination. The following specific information, therefore, is based on practices in 8 institutions. In 4 of these 8 institutions requiring preemployment physical examinations, the examinations are administered by private physicians, and in one institution all physical examinations are given by the health service physician. In the remaining 3 institutions physical examinations are given by either a private or a health service physician. Two (25 percent) of these 8 institutions assume the fee for all preemployment examinations. In one of the institutions where staff members may elect to have the physical examination administered by either a health service or private physician, the fee is paid by the institution when a health service physician gives the examination. Additional information with reference to location, enrollment, number of faculty, and laboratory rest used is available.

An analysis of section III of the questionnaire concerning current practices relative to periodic examinations in participating institutions revealed that ten (8.8 percent) of the institutions have some type of a requirement. Six of these 10 institutions require only a screening for tuberculosis. Five of the 6 schools require an X-ray, the remaining school reported requiring a tuberculin test but did not give the type used. Frequency of screening for tuberculosis varies as follows: One school requires a yearly X-ray, two require an X-ray every three years, one requires an X-ray every 2 years for those under 35 years of age and every 3 years for those over 35, one reported an X-ray being required each year or two, depending on age, but did not provide further explanation. In the remaining institutions it was stated that a tuberculin test is required, however, information concerning frequency was not given. In an effort to enforce compliance with the screening requirement, 2 institutions withhold the faculty members pay until the results of the X-ray are received; in one institution reminders are sent until the faculty member has the examination completed. In one school there is no penalty for failure to comply with the requirement, and two respondents did not reply to the question concerning procedure followed when the requirement is not met.

The 4 institutions in which a periodic physical examination consisting of more than a screening for tuberculosis is required also vary in their practices. In one school a physical examination is required of faculty members yearly. This examination is administered exclusively by private physicians, and it is required that a chest X-ray or tuberculin test, a blood test, a urinalysis, and a rectal examination be a part of the physical examination. Age of the faculty member is not a factor in determining frequency. No response was given to the question "Are penalty provisions established for failure to complete periodic examination?" The questionnaire in this institution was completed by the dean of the college.

In a second institution a physical examination is required from the faculty members private physician every three years. The questionnaire was compiled by the director of health service. It was also indicated that age is not a determining factor and no penalty provisions have been established for failure to complete the examinations. The result of a chest X-ray or tuberculin test is the only laboratory work required.

The third college has a policy that requires a yearly physical examination of faculty members. The director of health service who completed the questionnaire indicated, however, that even though this was a policy, the policy was not enforced. He also stated that age was not a factor, but that a physical examination was required and administered prior to granting tenure to faculty members. The only laboratory work required is a chest X-ray. Approximately 75 percent of the physical examinations given to faculty members in this institution are performed by private physicians.

A biannual examination is required in the fourth institution in which a periodic physical examination is mandated. The questionnaire for this school was completed by the dean of the college. He stated that all physical examinations are done by private physicians, that age of the faculty member is not a determining factor, and the school has no policy that provides for a penalty for failure to comply with the physical examination requirement. No specific laboratory work is required. However, an annual chest X-ray is given and paid for by the institution.

Section IV of the qustionnaire was formulated to secure recommendations with regard to preemployment and periodic physical examinations. Persons were requested to complete this portion of the questionnaire, regardless of current practice in their institution. This section consists of two basic questions. Respondents were asked to reply by checking yes or no to these questions. The first question asked was, "Do you recommend a required preemployment physical examination for faculty members as a desirable practice in institutions of higher learning?" Seventy (2 percent) of the persons completing the survey indicated that they would recommend a required preemployment examination. A breakdown showing position held by the respondent in their respective institutions who favored a required preemployment examination follows: Thirty-five (81 percent) of the directors of health service, 6 (75 percent) of the nurses, 9 (55.5 percent) of the directors of student affairs, 6 (60 percent) of the presidents, and 9 (37.5 percent) of the college deans recommended a required preemployment physical examination. All 4 vice-presidents, the business manager, and the director of college relations completing the form did not recommend a required preemployment examination.

The second question in Section IV of the questionnaire asked: "Do you recommend a required periodic physical examination for faculty members?" Sixty-four (57 percent) of the respondents signified they recommended a required periodic physical examination of faculty members. Broken down by position held, the following was discovered: Twenty-nine (67 percent) of the directors of health services, 6 (75 percent) of the nurses, 4 (44 percent) of the directors of student affairs, 6 (50 percent) of the presidents, and 10 (42 percent) of the college deans recommended required periodic physical examinations. Three (95 percent) of the vice-presidents, the business manager, and the director of college relations were not in favor of a required periodic physical examination.

Additional recommendations given in response to questions in Section IV of the questionnaire concerning policy to be followed in administering preemployment examination follow. Who should administer preemployment examinations? Twenty-four percent recommended health service physicians, 54 percent recommended private physicians, and 22 percent recommended either health service physician or private physician. Who should assume the fee for preemployment examinations? Thirty-five percent of the respondents recommended that the fee be paid by the institution. Fifty percent indicated the staff members should be responsible for the fee, and 15 percent felt the expenses should be shared by the institution and the staff.

Only those replies given by physicians to the question of which laboratory test should be included as part of the preemployment examination are recorded. It is felt that this is a medical decision and not one to be answered by nonmedically trained persons. Thirty-five physicians stated they would recommend a preemployment examination, of these, all agreed that either a chest X-ray or tuberculin test should be included. Twenty-seven recommended a blood test, 20 an ECG, 34 a urinalysis, 28 a rectal examination, and 24 a Pap smear. Qualifications regarding age were put on some of the affirmative answers with regard to the ECG and the Pap smear. For the ECG one physician said yes for persons over 35, 9 said yes for those over 40, one each for those over 45 and 55 respectively. One physician stated he would not recommend a Pap smear for women under 40.

In addition to stating their opinion concerning the desirability of periodic physical examinations, persons completing the survey were also asked to express themselves concerning the following: How frequently should periodic physical examinations be required? A total of 64 persons recommended periodic physical examinations, 25 (39 percent) said they should be yearly, 18 (28 percent) replied every 2 years, 25 (8 percent) felt every 3 years, 4 (6 percent) said every 4 years, and 7 (11 percent) suggested evey 5 years. In addition, 4 persons said the periodic examination should be administered prior to the renewal of the staff member's contract, and one respondent felt that the only required examination should be given prior to granting tenure.

The following response was given to the question "Should age of the faculty member be a determining factor in frequency of required periodic physical examinations?" Twenty-six (41 percent) said yes, and 38 (59 percent) responded negatively to this question. A number of comments were given by those persons who responded in the affirmative when asked to explain why they felt age is a factor that should be considered in periodic examination. The following are quotes taken directly from the returned questionnaires: "There is a deterioration with increased age." "Above fifty." "Yearly over 55." "Annually after 60." "Every two years prior to middle age and yearly thereafter." "Every two years to 40, yearly after 40."

Who should administer periodic physical examinations? was also asked, and the following responses were recorded: Twenty one (32 percent) stated the health service physician, 29 (45 percent) the private physician, and 14 (23 percent) reported they felt either the health service physician or private physician. The response by medical persons to the inquiry covering laboratory tests recommended for periodic physical examination was almost identical to that recommended for preemployment physical examinations.

Twenty-six out of 64 persons recommending required periodic physical examinations responded to the question of what penalty should be established for failure of staff members to comply to a requirement for periodic physical examination. Six persons checked the response of dismissal, 11 checked suspension, and 9 checked the heading of "other." The responses written under the heading of "other" included five persons recommending to withhold the faculty member's salary, and one each stating "no promotion or raise," "no renewal of contract," "place on a probation contract for one year then nonrenewal if faculty member does not comply."

Should religious belief be accepted as a reason for an exception to a required periodic physical examination? was the final question on the questionnaire. Forty-seven (74 percent) said no, 13 (20 percent) said yes, and 4 (6 percent) of the 64 persons recommending a periodic physical examination failed to respond to the question.

Summary

Findings of this study were based on returns from 113 institutions in 48 states and the District of Columbia. A diversity of institutions according to size were included. Enrollment ranged from 143 to 40,000 students, and the number of faculty members in participating institutions ranged from 15 to 1,600. It is the opinion of this writer that these returns were sufficient to represent existing practices in colleges and universities in the United States with regard to required preemployment and periodic physical examinations.

Seven and nine-tenths percent of the institutions taking part in this study currently have a requirement for a preemployment physical examination, and 8.8 percent of the institutions taking part in this study currently require some type of periodic physical examination after employment. Persons completing the survey also made the following recommendation which should serve as a general indicator of opinion regarding required physical examinations. Sixty-two percent of the persons completing the survey recommended a required preemployment physical examination, and 57 percent of the respondents recommended a required periodic physical examination.

Effects of Mental Practice on the Development of a Unique Motor Skill[1]

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The idea that long and arduous physical practice is the way to improve motor skill performance has long been a premise on which physical educators have based programs for the development of motor skill. More recently physical educators have recognized the importance of mental practice or "mind rehearsing" in the development of motor skill. Several studies have been conducted to test the influence which mental practice has on the development of motor skill. A review of the literature indicated that serious deficiencies existed in the body of knowledge compiled in this area. The purpose of this study was to fill some of these gaps, as well as to answer some of the questions not yet answered concerning the effects of mental practice on motor skill performance.

Purpose

The specific purposes of the study were the following:

1. To investigate the effects of mental practice and combined mental-physical practice as compared to physical practice in the development of a unique motor skill
2. To test the idea that performers of differing skill levels might benefit more from one specific type practice than from another and
3. To test the notion that the lasting effects of mental, mental-physical, or physical practice might vary as measured by a reduction in skill performance over a period of time.

Method

A treatment by levels design was used. Ten college male students were assigned to each cell of the experiment. A total of 120 St. Michael's College students, ranging in age from 17 to 26, were used as subjects. The subjects were volunteers who practiced and were tested during their free time at regularly scheduled experimental sessions.

Subjects were subjected to a prepractice juggling test which consisted of 30 attempts at tossing a suspended 18-inch wand held in the subjects' hands. The score on the performance of this task was the basis for the assignment of subjects to groups of high, medium, or low skill. The subjects within each skill group were randomly assigned to one of four practice groups: control, mental practice, mental-physical combination practice, or physical practice.

Subjects were then asked to practice a more difficult juggling task for a period of 21 days. All experimental subjects practiced this wand-juggling task 30 times daily for 21 consecutive days. The practice assignments were as follows:

1. *Control.* This group was subjected to no practice of any kind for the 21-day experimental period.
2. *Mental Practice.* This group practiced the criterion task mentally 30 times each day for 21 days. Subjects performed as prescribed by a direction sheet which was read every day of the practice. The task was demonstrated on the first day of the experiment only.
3. *Mental-Physical Practice.* This group practiced the criterion task in action 15 times each day and 15 times each day mentally as prescribed by a practice sheet. They also practiced for 21 consecutive days.

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[1] Table may be obtained from the author upon request.

4. *Physical Practice.* This group practiced the criterion task in action 30 times each day for 21 consecutive days.

On the 23rd day of the experiment all subjects were tested on the criterion task. The criterion task was similar to the prepractice task in that it was a wand-juggling task. It was, however, more difficult than the original pre-practice task. After the criterion test, all subjects were asked not to practice the task in any way for 30 days. On the 54th day of the experiment all subjects were again tested on the criterion test.

Scores on all tests were the number of successful tosses of the juggling wands out of a possible 30 attempts. A coin was tossed to determine the direction of the initial wand flip, either to the right or to the left. Score cards were used during practice and testing sessions to ensure standard numbers of trials for all subjects.

Results

An analysis of variance was conducted to detect treatment, skill, and interaction effects between group means. Practice group means were observed as significant at the .01 level of probability. Duncan's multiple range test was applied to the data and results indicated that there were no differences between the control group and the mental practice group. The mean scores of both the mental-physical and the physical practice groups were statistically greater than that of the control group. The physical-mental combined practice group mean was not statistically different from the physical practice group mean. These results indicated that mental practice was not effective in facilitating the development of a motor skill within the conditions of this experiment. The lack of a mental practice effect might be related to the fact that subjects had never experienced the juggling task. This lack of experience might make it difficult to visualize the mental rehearsal of the task.

That a statistical difference existed between skill groups was expected since groups were specifically assigned on the basis of their performance of a prepractice juggling task. The lack of an interaction effect between practice effect and skill level indicated the skill level of the performers did not affect their ability to benefit from a particular type of practice. It also indicated that differences in effects of different types of practice were not negated by differences in performance by subjects of different skill levels. The fact that no mental practice effect was observed would indicate further investigation is necessary concerning skill level of performance, especially in situations where mental practice is observed to be a variable in facilitating skill performance.

The technique of analysis of variance and Duncan's multiple range test were applied to the data collected after the 30-day latency period. These tests revealed no significant differences between mean scores of the control and mental practice groups. The mean scores closely resembled the criterion data. Conclusions concerning the lasting effects of various types of practice were limited because of the lack of a mental practice effect. Since no interaction was evident, the guess might be that there is no difference in the lasting effects of the different types of practice. Further research is necessary to substantiate this tentative hypothesis.

Discussion

Since subjects in this experiment had no practice in performing the juggling task prior to this experiment, and since mental practice subjects did not experience actual performance or observation of the task, it might be hypothesized that this lack of experience was the reason why no mental practice effect was observed.

All previous experiments in this area reporting mental practice to be effective were conducted using tasks common to all subjects. This fact would contribute to the hypothesis that mental practice facilitates development of physical skill ability only when the subject has had actual practice or experience prior to the mental practice.

Conclusions

1. Mental practice, within the limits of this experiment, was not effective in developing motor skill performance. It seems logical to suggest that mental practice could only be effective if it is based on previous experience in the skill task to be performed.

2. Although conclusive evidence was not presented in this study to support combined mental-physical practice effects, the evidence does lend support to the suggestion of other studies that mental practice is most effective in combination with physical practice.

3. No conclusion can be drawn concerning the effects of skill level on mental practice's ability to develop physical skill. It does seem that various skill levels do not benefit more from either combination practice or physical practice. It would seem the best method of teaching should be found and used regardless of the skill level of the subject.

4. Whenever possible, it would seem that physical practice would be best used to develop physical skill. Mental practice should be used in addition to physical practice, not instead of it.

5. Results indicated that certain treatment effects were not more lasting than others. No conclusions were made concerning the lasting effects of mental practice since no effects were observed. None of the different treatment groups gained or dropped appreciably after the latency period.

6. Skill level of subjects did not seem to affect the lasting effects of any type of practice. No conclusions were made concerning the lasting effects of mental practice. Therefore, no conclusions were made concerning the effect of different skill levels on the lasting effect of mental practice.

7. Results indicated that several variables may be the basis for the positive effects of mental practice reported by previous investigators. The results indicate that mental practice effects might be a result of improved confidence, better relaxation, and more time to analyze the task.

Mental, Social, Maturity, and Physical Characteristics of Underaged and Normal-Aged Boys in Elementary School Grades[1]

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This study was conducted to compare intelligence, scholastic achievement, interest, aspiration, peer status, maturity, body size, physique type, strength, and motor ability elements of boys seven to twelve years of age who were underaged and normal-aged for their respective grades.[2]

Procedure

Subjects. The subjects involved in this study consisted of 79 boys in grades 1 through 6 and ages seven through twelve years. Forty-five subjects were tested annually from age seven years and 34 subjects were tested annually from age nine years. The subjects tested annually from age seven years are known herein as the original sevens and those tested annually from age nine years are callde the original nines.

Formation of Groups. Two groups of subjects were formed for this investigation; one group was underage for their grade placement and the other group was normal in age for their grade placement. The seven-year-old underage group had birth dates from January 1950 through May 1950, while the normal-age group had birth dates from August 1949 through December 1949. The nine-year-old underage group had birth dates from January 1948 through May 1948, while the normal-age group had birth dates from August 1947 through December 1947. The distribution of boys comprising these groups is shown in the following tabulation:

	Underaged	Normal-aged	Total
Original sevens	13	32	45
Original nines	10	24	34
	23	56	79

The following arrangement of subjects was formed to facilitate the statistical treatment utilized in the study:

grade 2: age 7 vs. age 8 years
grade 3: age 8 vs. age 9 years
grade 4: age 9 vs. age 10 years
grade 5: age 10 vs. age 11 years
grade 6: age 11 vs. age 12 years

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[1] Bibliography may be obtained from the author on request. Summaries of significant t ratios for the differences between the means of underaged and normal-aged boys on the experimental variables accompanied the original paper.

[2] This study was conducted as a part of the Medford, Oregon, Boys' Growth Project. Support for the project was provided by Medford public schools, Southern Oregon College, the Athletic Institute, the Curriculum Development Fund of the Oregon State Education Department, and the Office of Scientific and Scholarly Research of the University of Oregon.

All subjects were tested within two months of their birthdays. This practice ensured reasonable homogeneity with regard to chronological age.

Experimental Variables. The following experimental variables were selected for use in this study:

Intelligence. California Mental Maturity, Form S; Otis Quick Scoring Mental Abilities, Form A, B, E, or M.

Scholastic Achievement. Gates Primary and Advanced Reading Tests; Stanford Achievement Test; Grade-point averages.

Interests. Children's Interest Blank; Dreese-Mooney Interest Inventory for Elementary Grades; What I Like to Do Interest Inventory.

Peer Status. Sociometric Questitonnaire; Cowell Personal Distance Ballot; Cowell Social Behavior Trend Index, Forms A and B.

Aspiration. Grip Strength Level of Aspiration Test.

Maturity. Skeletal age from hand-wrist X-ray evaluated by the Gruelich-Pyle standards.

Physique Type. Somatotype components of endomorphy, mesomorphy, and ectomorphy.

Body Size. Anthropometric measurements of upper arm girth, abdominal girth, thigh girth, standing height, body weight, and the chest girth times height index.

Strength. Physical Fitness Index; push-ups performed on the parallel bars; and the average score of eleven cable-tension tests.

Motor Ability Elements. Speed and agility in the 60-yard shuttle run; explosive power in the standing broad jump.

Analysis of Data. The mean scores on all tests were computed separately for the underage and normal-age boys. The difference between the means of the two groups were then computed and tested for significance at the .05 and .01 levels by application of the t ratio. Inasmuch as the number of subjects differed for the various comparisons of means, the t ratios needed for significance also varied; for the various degrees of freedom, these t ratios ranged from 1.99 to 2.04 at the .05 level and from 2.64 to 2.75 at the .01 level.

Results

Intelligence. In the comparisons of the intelligence quotients obtained by underaged and normal-aged boys in grades 3 through 6, no significant differences between the means were found. The mean intelligence quotients obtained for these boys ranged from 107.85 to 114.25. Thus, all of the means obtained in these comparisons were above the national norm of 100.

Scholastic Achievement. Of the 34 comparisons, 7, or 20 percent of the differences between means on the scholastic achievement measures were significant at or above the .05 level. To conserve space in this report, only the variables on which significant differences were obtained are presented.

The situation in the 4th grade was most noteworthy with four differences between means being significant; in all instances Stanford Achievement Test elements were involved and the older ten-year-old boys were superior to the younger nine-year-old boys in this grade. Two of the mean differences were significant between the .05 and .01 levels; the Stanford elements were word meaning and spelling with t ratios of 2.44 each. The other two Stanford measures were arithmetic reasoning and arithmetic comprehension; significance was beyond the .01 level with t ratios of 4.45 and 4.02 respectively.

Three other differences between means were significant between the .05 and .01

levels; again the older boys had the highest means. The scholastic measures and grades were as follows: paragraph meaning, Gates Reading Test, in grade 2; arithmetic comprehension, Stanford Achievement Test, in grade 5; paragraph meaning, Stanford Achievement Test, in grade 6.

All differences between the means of underaged and normal-aged boys on scholastic items without significant differences in any grade were grade point average, language and total achievement on the Stanford Achievement Test, and word meaning on the Gates Reading Test.

Interest. Of the 42 comparisons on the interest measures, 6, or 12 percent of the differences between means were significant at or above the .05 level.

The only significant differences between means on the interest inventories were obtained in the 6th grade; in all instances What I Like To Do Interest Inventory elements were involved. In this grade, the younger eleven-year-old boys obtained higher means than the older twelve-year-old boys in art, music, active play, and quiet play interests; the t ratios ranged from 2.02 to 2.77. However, the older 6th grade boys obtained higher means on home arts and science interest elements; the t ratios of 3.12 and 2.39 were significant at the .01 and .05 levels respectively.

All differences between the means of underaged and normal-aged boys on interest measures were insignificant in grades 2, 4 and 5; no comparisons were possible in grade 3, as comparable interest inventories were not administered in this grade. The interest items without significant differences in any grade were the Children's Interest Blank, the Dreese-Mooney Interest Inventory, and the social studies and manual arts elements of the What I Like To Do Inventory.

Peer Status. Of the 26 comparisons on the peer status measures, 4 or 15 percent, of the differences between means were significant at or above the .05 level.

The situations in the 2nd and 5th grades accounted for all significant differences; in all instances, sociometric questionnaire elements were involved and normal-aged boys obtained higher means than underaged boys in each grade. In the 2nd grade, two of the mean differences were significant between the .05 and .01 levels; the questionnaire elements were number of times chosen as a friend and number of times chosen to help with homework, with t ratios of 2.05 and 2.29. For the 5th grade, significant mean differences were observed in the number of times chosen as a friend and the number of times chosen for homework; significance was near or at the .01 levels, with t ratios of 2.84 and 2.61 respectively.

All differences between the means of underaged and normal-aged boys on peer status measurements were insignificant in grades 3, 4, and 6. The peer status items without significant differences in any grade were number of boys chosen for friends category of the sociometric questionnaire, the Cowell Personal Distance Scale, and the positive and negative forms of the Cowell Social Behavior Index.

Level of Aspiration. In the comparison of the level of aspiration evaluations of the underaged and normal-aged boys in grades 4 through 6, no significant difference between the means was found.

Physical Measures

Skeletal Age. For all grades, the normal-aged boys had significantly higher skeletal age means than did the underaged boys. The differences between the means were significant at and above the .01 level; the t ratios ranged from 2.86 to 4.94.

Somatotype. The differences between the means of the underaged and normal-aged boys in the various grades on the three somatotype components were not significant.

Body Size. Of the 40 body-size comparisons, 30, or 75 percent of the differences between means were significant near or above the .05 level. With one exception (upper arm girth), the normal-aged boys in each grade had higher means than the underaged boys. The significant differences favoring the normal-aged boys were as follows: standing height, all grades; body weight, all grades but the 5th; chest girth x height, 2nd, 3rd, and 4th grades; abdominal girth and thigh girth, 4th and 6th grades. Of these significant differences, five were found at the 4th grade, four at the 5th grade. The upper arm girth mean of the underaged boys was higher than the mean of the normal-aged boys in the 3rd grade; this difference only approximated significance, however, since the t ratio was −2.

Strength. For all grades, normal-aged boys had significantly higher means for the average score of 11 cable tension tests than did underaged boys. The differences between these means were significant at and above the .05 level; the t ratios ranged from 2.53 to 4.29. However, in grade 3, the underaged boys obtained a significantly higher mean Physical Fitness Index; the t ratio of −2.16 was significant at the .05 level.

Motor Ability Elements. Of the 15 comparisons involving motor ability elements, 9, or 60 percent of the differences between means were significant at or above the .05 level. In all instances, the normal-aged boys in each grade had higher means than did the underaged boys. These significant differences were as follows: shuttle run, 2nd and 3rd grades; standing broad jump, 2nd, 4th, and 6th grades; standing broad jump x weight, all grades but the 3rd. Of these significant differences, three were found at the 2nd grade, two at the 4th and 6th grades, and one at the 3rd and 5th grades.

Summary of Results

1. No significant differences between the means of boys who were underaged and normal-aged in the same elementary school grades were obtained in the physique type and intelligence tests.

2. Significant differences between the means of underaged and normal-aged boys were obtained in scholastic achievement, interest, peer status, maturity, body size, strength, and motor ability elements; these differences were obtained in 25 percent of the scholastic achievement, 12 percent of the interest, 15 percent of the peer status, and 56 percent of the physical measure comparisons. The most noteworthy situations were found in the 4th grade for scholastic achievement and the 6th grade for interest elements. The relative superiority in maturity, body size, gross strength, and motor ability elements possessed by the normal-aged boys appeared to prevail throughout the elementary school grades.

Effects of the Extra-Man Penalty in Lacrosse

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Lacrosse, or "bagataway" as it was originally called, was the first form of athletic competition known to the North American continent. It was initially played by the Canadian Indians and has today become an increasingly popular interscholastic and intercollegiate sport.

Whenever any sport becomes widely played by high schools and colleges, an effort is made by coaches to analyze the fundamental factors involved in that game and to use this knowledge toward developing successful athletic teams. This project was designed with the idea of determining what effect one of these factors, the extra-man penalty situation, has on intercollegiate lacrosse games.

The extra-man penalty situation results when a player commits a particular rule violation which calls for his temporary expulsion from the game for a period of from one-half minute to three minutes. (Since two- and three-minute extra-man periods are relatively rare, this project dealt exclusively with the one-half minute and one-minute extra-man periods.) The time length of the expulsion depends on the severity of the particular violation. During this expulsion period, the opposition plays with an extra man and, it would seem, with an increased chance of scoring a goal.

Purpose

Since one of the objects of intercollegiate athletic competition is to provide for contests between teams of equal size, a question may arise concerning the advantages or disadvantages of such an extra-man period. Thus, although there were five specific aspects of the extra-man penalty studied in this project, the underlying purpose was to determine if such a rule has an adverse effect on the final outcome of a game which was meant to be played by two teams with an equal number of players.

The following is a list of the five specific aspects of the extra-man penalty which were examined in this project:

1. The relationship of penalty-frequency to total game score.
2. The relationship of goals scored in extra-man periods to the total number of goals scored in the game.
3. The relationship of goals scored in extra-man periods to the total number of extra-man periods.
4. The distribution and length of time of penalties incurred by attackmen, midfielders, and defensemen.
5. The relationship between extra-man goals and the final game outcome.

Procedure and Results

In choosing the teams to be used as subjects for this study, two essential factors had to be considered: the subjects had to be chosen from a specific league or conference so they would all compete under a uniform set of rules, and the teams had to be of relatively equal abilities so that normal competitive factors would be present in the games to be studied.

With these considerations in mind, specific varsity lacrosse teams from the 1963 New England Intercollegiate Lacrosse League were chosen. These particular colleges and universities were chosen on the basis of their 1963 won-lost records, with additional consideration being given to the difficulty of each team's schedule. There were a total of 32 games examined in this project.

This study will be divided into five sections, each dealing with one of the previously mentioned five major areas of study. Each section will include methods, conclusions, and any explanations which may be pertinent to that particular area of research.

Section 1—The relationship between penalty-frequency and the total game score. This section was designed to determine if the number of total goals scored in a lacrosse game would increase as the number of extra-man penalties increased; and conversely, if the number of total goals would decrease as the number of extra-man penalties decreased.

The Pearson product-moment correlation test and the t test of significance were used to study the possible relationships between these two factors. The results, although showing a slightly positive correlation, did not achieve the level of significance necessary to indicate a significant relationship between penalty-frequency and total goals scored.

Although this study failed to establish a significant relationship between these two factors, the fact that there was a slightly positive correlation (.183) achieved in the Pearson product-moment test might indicate that a survey of a greater number of games could show a significant relationship between these two factors.

Section 2—The relationship of goals scored in extra-man periods to the total number of goals scored in the game. The purpose of this section of research was to ascertain exactly what percentage of the total goals scored in a lacrosse game were of the extra-man variety. A chart was developed which included the number of regular goals (those scored when the teams had an equal number of men), extra-man goals, and total goals. After these figures were determined, the resulting percentages were computed.

The results of this survey showed that 22.1 percent of all goals were of the extra-man type. In other words, more than one-fifth of all the goals scored in these intercollegiate lacrosse games were scored when one team had the extra-man advantage.

The results also indicated that a typical lacrosse game in the New England Intercollegite Lacrosse League had approximately 13.4 total goals scored per game. Of these, approximately 2.9 were extra-man goals, while 10.5 were goals scored when the teams had an equal number of men.

Section 3—The relationship of goals scored in extra-man periods to the total number of extra-man periods. A simple way to express the object of this section of research is that the capitalization percentage in extra-man situations was being sought. In other words, given a certain number of extra-man opportunities, what percentage of the time can the average college lacrosse coach expect his team to capitalize by scoring a goal?

The classification of data for this analysis involved the formulation of a chart identifying both the total number of extra-man situations and the total number of extra-man goals scored in each game. Following these compilations, cumulative capitalization percentages were computed for one-half minute, one minute, and a combination of both of these varieties of extra-man periods.

The results of this section showed that the capitalization percentage in a one-half minute extra-man period was 13 percent. In one-minute situations it was 20.9 percent, and in the combination of these, the percentage was 19.8 percent.

These statistics indicated that, in general, college lacrosse teams score goals in extra-man periods at a rate of from one out of seven to one out of five opportunities.

It is interesting to note that most of the coaches of the teams involved in this project were interviewed regarding this particular area of study and most expressed the view that the capitalization percentages in one-half and one minute extra-man periods should be at about the 50 percent level. This figure, taken in contrast to the actual results of the study, indicated that the results of this area of study should be of significant value to the college lacrosse coach.

Section 4—The distribution and length of time of penalties incurred by attackmen, midfielders, and defensemen. This portion of research was undertaken to clarify a wide range of coaching opinions concerning which players actually incur extra-man penalties and whether or not this distribution would hold true in both the one-half and one minute extra-man situations.

As their position names suggest, the attackmen are offensive players, the defensemen are defensive players, and the midfielders are both offensive and defensive players. The chi square test of penalty-time distribution and player positioning was used, and the results indicated that there was a definite relationship between the position of the players and the number of extra-man penalties incurred. The following table shows the percentage breakdown of penalties incurred by the players in one-half minute, one minute, and the combined penalty periods.

PERCENTAGE BREAKDOWN OF PENALTIES INCURRED

	30 sec.	60 sec.	Combined
Attack	26%	15%	17%
Midfield	33	51	48
Defense	41	33	35

The resulting statistics indicated that midfielders incurred the majority of extra-man penalties. This could be due to the fact that since they must play both offense and defense, fatigue is apt to occur and therefore such penalties are likely to occur. Also, by the nature of his position, the midfielder will be involved in more of the playing action than most attackmen or defensemen, and he would therefore be more likely to commit a violation which might lead to an extra-man period.

Section 5—The relationship between extra-man goals and the final game outcome. This portion of research was probably the most significant area of all in that it dealt with the actual effect of the extra-man penalty on the outcome of the lacrosse game.

In order to determine this relationship, it was necessary to first determine the number of total goals scored by each competing team, and then subtract the number of extra-man goals scored by each from their total scores. If the resulting figures showed a change in the winning team, then it was assumed that the extra-man goals were responsible for the difference in the final outcome of the game.

The results of this area of study showed that out of the 32 games surveyed, only 4 would have had different results if the extra-man goals scored by the competing teams were subtracted from each of their total scores. In other words, 12.5 percent of the games studied had differing outcomes when this process was utilized, while 87.5 percent of the outcomes remained the same after this procedure was used.

Conclusions

The results of this study should be of great assistance to the lacrosse coach in developing successful teams. Although the rules of lacrosse provide for a situation in which one team has an advantage over another, the rule does not impede the equality of competition that coaches and physical educators strive for in intercollegiate athletic competition.

Physical Performance as an Indicator of Potential Academic Performance of Marginal Temple University Freshmen

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During the fall semester of 1964-65, Temple University admitted 3,569 freshmen. As in most other institutions of higher education today, it is a problem at Temple to determine which freshmen will be successful college students and which ones will not be successful. At Temple University, the admission policies are based primarily on the College Board scores and the high school quintile rank.

In education, two of the commonly unmeasured prerequisites for success are the individual's willingness to work hard and his drive to succeed. With this drive concept as an underlying factor, it was hypothesized that the physical drive estimation of our marginal freshman students would indicate which students would be better academic risks, since this estimation might reflect a drive to succeed.

Review of Literature

The data from studies at other institutions have indicated that physical fitness test scores are useful in predicting which students will be successful in college. Several methods of attacking the general hypothesis have been used by investigators. A typical method used was to consider all freshmen students as a population and then complete a correlation analysis of each of the entering classification tests, including physical fitness, to determine which tests had the highest relationship to academic success in college. One example of this type of study was completed by Doornink. He found a relationship between strength fitness and success at the University of Oregon. The data seemed to indicate that a low level of physical fitness had an adverse effect upon success in college. Another example of this type was the study by Weber who investigated the relationship between physical fitness, as measured by the Iowa Physical Efficiency Profile, and success in school, as measured by academic grades earned at the State University of Iowa. The academic success of each student was based upon the student's grades during his freshman year (1950-51). Weber found a significant relationship (.41) between their physical fitness scores and grade point averages.

Appleton completed a study at the United States Military Academy in 1949 designed to determine the relationship between physical ability and the official measures used to determine cadet success. A high positive curvilinear correlation was found to exist between physical ability upon entrance to the academy and a success-failure criterion which had been developed. There were twice as many failures among the cadets who were in the lower 7 percent physical ability range as among those in the upper 7 percent physical ability range. In a later study of West Point cadets, Kobes reported in 1965 that the physical fitness scores of entering cadets were still good indicators of class leadership and success at West Point.

At Springfield College, Hart and Shay found that although physical fitness scores (PFI's) were not good general predictors for academic success, the correlation was high enough (.66 with Scholastic Aptitude Test scores held constant) for the sophomore women students enrolled at Springfield College in 1961 to indicate that physical fitness should be considered as a necessary factor for the improvement of the academic index.

Other types of studies have been designed to test the general hypothesis proposed in this study by comparing the academic achievements of college students with low physical fitness with the other students. An example of this kind of study was that of Page who found that 83 percent of the freshmen male students dismissed from Syracuse University because of low grades had Physical Fitness Indices below 100 and 39 percent had PFI's below 85. These students had scholastic aptitude scores well above many other students as evidenced by their median score which was at the 72nd percentile. Another study, also of low fitness individuals, was the case study analysis reported by Coefield and McCollum at the University of Oregon in 1955. They found that the 78 male freshmen with the lowest PFI's during the 1954 fall term were definitely low in scholastic accomplishment compared with all men at the university even though the scholastic aptitude of these students was rated as superior.

Method

In this study, 159 freshmen who entered college during the fall semester 1964-65 were identified as marginal entrants by their College Board scores or by their high school quintile. In most instances, they were allowed to enroll because of individual recommendations. Of this group, the boys and girls who enrolled in the first course in physical education (HPER 1.0) were classified by their instructors as having high drive towards physical activity, in the top 25 percent; or low drive towards improving their physical condition and activity in general, in the bottom 25 percent; or in the middle, 50 percent. Almost half of the students were borderline classifications or were not known well enough to be classified.

The number of students in the various classifications were as follows: high drive, 22; middle drive area, 39; low drive, 25; and not classified, 73.

The grade point average for the first college semester of the top physical drive group was compared with the grade point average of the low drive group. The grade point averages of the two groups at the end of the second semester were also evaluated. The Fall 1965-66 semester is the third semester of college for these students and the percentages of students who were still enrolled after midterm from each group were also compared. The differences in all comparisons were tested for significance by the t ratio technique.

Results and Discussion

The grade point average of the high physical drive group at the end of their first semester in college was 1.42. This grade point average was not significantly different from the 1.37 earned by the marginal students who were classified as having little physical drive (t ratio 0.27).

In reflecting upon this result, it seemed logical that the difference might not become significant for several semesters due to the number of freshmen who find it difficult to make the adjustment to college and the general low grades of first semester freshmen. If the differences were to become greater after several semesters, this would support the hypothesis that the person who had trained and sacrificed in physical activity might be better able to withstand the stress of college and also might keep trying until he was able to adjust to the requirements.

Another point that was noted after the analysis of the first semester data was that there were no girls rated as having high physical fitness. This could be interpreted as supporting the general hypothesis in that all girls who had high physical drive may have had enough academic drive so that they were not classified as marginal entering college students. Due to the size of the sample, however, it is just as logical to believe that their physical education instructors may have had high standards and due to the small total number, none of the girls were rated as being in the top 25 percent. The total number of girls who were rated by their instructors was only 24, with 12 girls classified in the low physical drive group and 12 in the middle physical drive group. Due to this distribution, the analyses during the second and third semesters were not completed for the girls included in this study.

The cumulative grade point average for the marginal male entrants who were rated in the high group and who were still in school the second semester was 1.51. This was significantly higher (.05 level) than the 1.14 GPA earned by the low physical drive group (t ratio 2.08). The grade point average for the marginal boys in the top physical drive group the first semester was 1.42 and for the low group 1.18 (t ratio 1.14).

There was further support for the general hypothesis when the percentages of students in each group who were still enrolled after the midterms of the third semester were compared. Although only 58.2 percent of the original 59 boys and girls were still enrolled, 63.6 percent of the original high fitness boys and only 38.5 percent of the low fitness boys were still enrolled.

These data suggest that physical fitness scores of marginal freshmen at Temple University may help predict which marginal male freshmen will be better academic risks. We are currently planning to follow up this study by attempting to identify specific tests of physical drive which will differentiate between the successful and unsuccessful marginal entering students.

Peripheral Vision and Accuracy in Shooting a Basketball

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A basketball player relies on many visual cues while playing, and most of these cues are received in the peripheral area of the retina. To increase the effectiveness of a player's basketball ability it is important that the utilization of this marginal (peripheral) vision be exercised to as great an extent as possible.

One basketball skill that has been overlooked, however, is the use of the peripheral field when shooting the ball. To develop skill in shooting, the player is generally instructed to follow the basic rule of sighting on the rim of the basket—a procedure that eliminates the possible utilization of peripheral vision. Is this sensory perception important enough to change our teaching techniques in shooting to include the visual area?

The purpose of this experiment was to determine if a relationship existed between the shooting accuracy of a player using peripheral vision and the accuracy achieved when sighting on the basket.

Griffith stated that marginal vision is an important factor in the fundamental skill of dribbling. It is easy to dribble a ball when looking directly at it, but a basketball player must observe the playing area, his opponent and his teammates, therefore, indirect vision is the only efficient method of accomplishing this task. However, vision alone is not sufficient, a sense of touch is also important in the mastery of the dribbling skill. In another study Griffith recommended blindfolding players to develop "muscular feel" or the sense of touch.

In a more recent study on perception, Stroup gave evidence of a real difference between the range of the field of motion between basketball players and non-basketball players and that the range of this field is a factor in contributing to an individual's basketball ability.

Procedure

Ten varsity basketball players from East Stroudsburg State College were used as subjects for this experiment. Each subject was given a test of visual acuity, depth perception, and peripheral vision on specialized equipment approved by the American Automobile Association. The visual acuity test was given with the subject seated at a point exactly 20 feet from the eye chart. Each eye was tested separately starting with the right eye, the left eye being completely covered with a card. The left eye was similarly tested, and finally both eyes were tested simultaneously. The degree of visual acuity was determined for each eye by reading the smallest letters that could be seen 20 feet from the chart.

For the depth perception test the subject was seated exactly 20 feet from a fixed rod and was given strings attached to a movable rod. The subject was instructed to line up the two rods using the strings. When the subject believed the two rods were aligned, the examiner read the score from the scale on the testing device. The scale was marked from zero to three inches in front and in back of the fixed rod. The subject's score for each trial was the exact distance (in quarter-inches) from the fixed rod. In giving the test the examiner placed the movable rod in a different position for each trial, avoiding an obvious pattern in setting the rod. The subject was given two practice trials to make sure he fully understood the directions and then he was given three test trials.

For the field of vision test the subject placed his nose in the notch of the testing device keeping his eyes on a level with the two movable targets. The subject was instructed to indicate when motion was observed. The examiner manipulated the targets from below the device and when motion was observed the number of degrees was recorded for each eye. The total of these two observations was his score on the test.

In preparation for the shooting phase of the experiment, a shooting arc was marked on the gymnasium floor 15 feet from the center of the basket. A line was then drawn from the center of the basket perpendicular to the end line of the court, so that it intersected the shooting arc, thus dividing it into two halves. The intersection was designated as 0°. The two shooting stations used for the experiment were located 3 feet to the right and 3 feet to the left of 0°. Sight lines used for the peripheral shooting phase were marked at angles of 10°, 20° and 30° right and left from the center of the basket (using the shooting stations as points of origin).

The shooting phase of the experiment was divided into five trials. The first trial consisted of each subject shooting a series of one hundred shots, sighting directly on the rim of the basket. The one hand push shot was used throughout the experiment with right-hand dominant players shooting from the right and left-hand dominant players shooting from the left. For the second trial the subject sighted on a pole, at basket level, at an angle of 10° from the center of the basket and completed a series of one hundred shots at the basket. For the third trial the subject sighted on the top of the pole 20° from the center of the basket, and for the fourth trial the subject sighted on the top of the pole 30° from the basket. For the fifth trial the subject was blindfolded and shot a final series of 100 shots at the basket. Verbal directions by the experimenter were given the subject during the blindfold test to indicate the accuracy of his shot.

Each subject reported to the gymnasium at approximately the same time each day. The daily schedule for each subject included a series of 100 shots in a designated pattern that was designed to cancel out any effects that could be attributed to the order in which the shots was taken. The subjects worked in pairs, alternating 10 shots at a time to minimize the influence of fatigue. The daily shooting schedule was preceded by a 10-minute warm-up period. The same schedule was adhered to until each subject repeated the experiment two times—200 shots for each of the five conditions specified.

The experimenter and his assistant, who retrieved the ball, positioned themselves to check eye focus. Any deviation on the part of the subject from the top of the sighting pole was brought to the attention of the shooter and the shot was disallowed. The number of shots made for each of the five trials of the experiment were counted.

An analysis of variance was computed for the five trials of the experiment. A critical difference of 8.9 was computed to establish significance at the .05 level. For the ten differences compared, all but three were found to be significant at the level established.

MEANS AND DIFFERENCES BETWEEN THE MEANS FOR THE FIVE METHODS

Method		Means	Differences
Normal	1	153.1	
			5.8
10°	2	147.3	
			26.6
20°	3	120.7	
			4.7
30°	4	116.0	
			6.4
Blindfold	5	109.6	
			11.1
20°	3	120.7	
			32.4
Normal	1	153.1	
			37.1
30°	4	116.0	
			31.3
10°	2	147.3	
			37.7
Blindfold	5	109.6	
			43.5
Normal	1	153.1	

Conclusions

1. No significant differences were found for the following comparisons: (a) normal sighting and sighting 10° from basket, (b) sighting 20° and sighting 30° from basket, and (c) sighting 30° from basket and shooting blindfold.

2. As the number of degrees of peripheral sighting are increased, accuracy in shooting is decreased.

Effect of Various Massage Techniques on Immediate Muscle Force and Reaction Time[1]

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The purpose of this study[2] was to determine the effect of various types of massage and tapping on immediate muscle force and reaction time.

Review of Literature

Massage has been the subject of many ambiguous statements over the years. A survey of the literature reveals that much of our present day knowledge of massage is empirically based. Several workers refer to the vasodilation caused by mechanical stimulation characterizing manual massage and attribute it to reflex effects and to local release of acetycholine and histamine-like substances. The effects of mechanical massage on the circulatory system as determined by temperature changes and by the rate of clearance of radioactive sodium have also been noted. Only a small amount of the effect of mechanical massage has been subjected to clinical and physiological investigation. Some reference of high frequency low amplitude oscillations in one plane called "ultrasound" has received attention. The subject of low frequencies of comparatively high amplitude and in different planes are now the subject of investigation because of their occurrence in important fields of human activity. It is of interest to note that in the more recent study by Williams it was noted that low frequency energy caused relaxation of voluntary striated muscle in spasm. It was also indicated in the same research that there was an indication of the relaxation of the muscles of the back in the normal individual following mechanical massage.

The statement made in Lichts's treatise that massage to the abdominal musculature will strengthen the abdominal wall is of interest in the following research project. Magiora reported that massaged muscles could do much more work than they could without massage. Kroneker and Stiriing reported that massage lessens irritability and increases the work output of muscles. According to Baumgartner the most important organs directly affected by massage are the muscles. According to this same author, massage actually causes a quicker removal of fatigue products than takes place naturally.

The possible reflex mechanism taking place as a result of massage is the basis for the hypothesis that the stimuli pass along the afferent fibers to the spinal cord and to various segments affecting muscle.

Methodology

Source of Data. Twenty female University of Connecticut physical therapy students between the ages of 18 and 21 were tested on isometric plantar flexion and reaction time before and after massage to the calf region.

Method of Collecting Data. Isometric plantar flexion force was measured by the use of a strain guage coupled to an amplifier and strip-chart recorder. Reaction time was measured by use of electrical-mechanical apparatus designed and constructed for this experiment.

Administration of Tests. The subjects were oriented as to the purpose of the research. All testing for this study was conducted at the School of Physical Therapy, University of Connecticut. Each subject was given a strength test and reaction time test on the right leg first. After the initial tests the mechanical massage unit was used to administer mechanical massage (vibration was administered for 2 minutes at a rate of 80 vibrations per minute). The pressure of the vibrator to the area under it was 3 pounds.

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[1] Bibliography may be obtained from author upon request.

[2] This study was supported by a grant from the Research Council Service, University of Massachusetts, grant number FR-P11-65.

The left gastrocnemius muscle was tested next for its force in isometric plantar flexion and reaction time before and after one minute of effleurage massage. Effleurage massage was administered by the same researcher in all cases and pressure was subjectively determined.

Test Position for Force. All subjects assumed a prone position on the test plinth with the lateral malleolus even with the edge of the foot end of the table. The body position was maintained by use of adjustable shoulder braces.

The test harness for plantar flexion force was placed over the metatarsal phalangeal joint of the great toe on the plantar surface. The test harness was placed with the ankle in the neutral position.

Reaction Time Test. The subject was in the same prone position as described in the force test with the modification that the subject's foot was tested in a relaxed position. A metal ring was taped over the dorsal metatarsal phalangeal joint of the great toe.

The subject was coupled to the microreaction time switch by a tab placed in such a way that ankle movement would break the electrical circuit. The tab in turn was connected to a nylon line threaded through the metal ring on the subject's foot with a weight of 10 grams at its end. This in turn allowed for adjustment of the varied foot-leg lengths and yet allowed for a reliable and valid test of movement. The reliability of this method was an r of .94. The subject merely had to extend his foot to activate the timer stop circuit.

Analysis of Results

A series of statistical procedures were applied to the data to determine which aspects of the performances were significantly changed upon application of effleurage, vibration massage, and tapping. The subjects in this study were their own control group in that tests were taken before and after massage on the same subject and with the same test.

In order to determine whether the change in scores of this sample could be attributed to the massage element or merely to chance, the difference between mean scores of each performance was tested for significance. The t's computed with the data and corresponding t's of the .05 level of confidence were compared.

Subjective Reaction to Test. The comments made by the subjects before and after the test situation indicated an interest in the research. This might be due in part to the fact that they were all students of physical therapy. The subjects' responses after massage varied from, "I felt loose in the calf region," "My foot feels heavy," to "My ankle movement feels loose but slow." In a few instances there was a complaint of irritability during massage but this disappeared after voluntary relaxation on the part of the subject.

Conclusion

Objectively, effleurage massage did not increase ankle plantar flexion force as measured in this study. Plantar flexion force was increased by vibration massage and might be attributed to the stimulating effect of vibration as to the possible relaxing effect of effleurage. Reaction time did not show a significant change at the .05 level of confidence following either effleurage or vibratory massage. This seems to be in conflict to subjective reasoning of a stimulating effect resulting in a quicker reaction and a slower reaction to relaxing medium. This is to state that effleurage might be considered as a relaxing method and vibration as a stimulating medium.

Of interest were the objective results of tapping on plantar flexion force as measured in this study. Both one tap to the calf region and twelve taps to the same region bilaterally resulted in diminished force readings. One should not conclude from this that tapping will lessen force potential as the time spectrum and force range were not experimentally explored in this study. The force used was subjective and the one count to the twelve count were chosen in the same subjective manner.

Effect of Fast Versus Sustained Muscular Stretch Upon Reaction Latency and Speed of a Limb Movement[1]

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In light of physiological evidence regarding the effect of the rate and degree of muscle elongation upon the stretch reflex, it was proposed that rapid stretch would be superior to a slower sustained type of stretch in facilitating reaction time and the speed of a limb movement.

Review of Literature

Studies involving the stretch reflex have traditionally followed two lines of investigation: limb movement and body posture.

Scientific interest in the stretch reflex is by no means a recent phenomenon. In 1924 Liddell and Sherrington published the results of their study "Reflexes in response to stretch (myotatic reflexes)." Within the same decade Adrian and Zotterman and other pioneers in this field continued to lay a firm foundation to the body of knowledge which exists today.

The three principle sense organs associated with the muscular reflex system are the sense organs located in the joints, the muscle spindles, and the Golgi organs which are found in the tendons. The present review is concerned mainly with the muscle spindle.

The stimulus of muscle stretch activates specialized muscle spindles which intermingle with and are parallel to muscle fibers. Large gamma afferent nerve fibers can be stimulated by afferent dorsal root fibers which originate from the muscle and tendon spindles. Hence activation of the gamma afferents via the gamma reflex loop innervates the smaller alpha motor neurons which directly influence the muscle. The muscle spindle can be visualized as a servomechanism which is sensitive to differences in the rate-change ratio between the lengths of the spindle and the muscle. The spindle has a homeostatic function in that, through the mechanism of the feedback from the gamma loop reflex, it is primed to assist in maintaining the differences in length ratio at a minimum.

Boyd claims that "all spindles contain two distinct types of intrafusal muscle fibers, 'nuclear bag fibers' and 'nuclear chain fibers,' which differ in structure and innervation." Bouman points out that "the spindle has a contractile mechanism and by contracting independently from the muscle it can, as it were, prestretch its own sense organs."

Stretch reflex interactions were studied by Partridge with the aid of stimulation, and he concluded that the amplitude of a stretch reflex response probably is dependent upon the rate and degree of adaptation, stretch velocity, the features of the pulse conversion in the receptor, and the wave summation in the muscular system.

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[1] Bibliography may be obtained from the author upon request.

Partridge is also convinced that there is "a threshold length below which no response is elicited. Adaptation to a stimulus—that is, the initial firing rate, and generator potential produced by sudden stretch decrease with time even though the stretch is kept constant, a residual response after adaptation consisting of an impulse rate approximately proportional to the amount of stretch, finally the ability to convert a continuous, variable process to a pulse response at a rate proportional to the instantaneous intensity of the excitatory process." He has based his statement mainly upon the experimental findings of Adrian; Katz; Lippold, Nicholls, and Redfearn; and Matthews.

Lippold and others substantiated the findings of Matthews and Katz in clearly demonstrating that the stimulus to the spindles was the velocity of stretch. They showed that muscle stretch receptors respond chiefly to displacement at low velocities of stretching, while above 3 cm/sec their response is entirely attributable to velocity. It was also recorded that when the stretching velocity of the muscle was at its maximum the spindle was also discharging at its maximum rate.

This review has not scratched the surface regarding the extensive research which has been and is currently being undertaken in the field of muscular stretch and its effect upon muscle spindle activation and subsequent motor movement.

Method

Thirty-three college male volunteers participated in an experiment conducted under the following three conditions:

Condition A (free arm swing). The hand of the subject's laterally extended arm lightly rested on a reaction time-movement time microswitch which was connected in series with two standard .01 second timers. Following a randomly activated stimulus light the subject, who was seated, reacted as fast as possible and swept his outstretched arm through an arc, at the end of which was a photocell beam which stopped the movement time clock when so activated.

Condition B (premovement stretch). Prior to each reaction time and speed of movement trial, the subject completed five rapid maximal backward swings with the extended arm in order to stretch the prime movers.

Condition C (stretch hold). Before each movement the subject abducted his outstretched arm backward as far as possible and held the arm in that stretched position for six seconds.

Each subject completed 15 trials. The test conditions were rotated and adequate rest intervals were provided between trials and conditions.

Results

Reliabilities (split half, corrected by Spearman-Brown formula) were quite acceptable for the three experimental conditions as they ranged from .90 to .91 for reaction time and .87 to .94 for movement time. For the three conditions intercorrelations between reaction and movement time were very low (.007 to −.206) and corroborate the earlier work of Henry, Clarke, and Smith who have emphasized the high degree of specificity of relationship which exists between these two variables.

However, the main focus of interest was to determine to what degree, if any, two types of premovement muscular stretch had upon subsequent reaction time and speed of arm movement. Variance analysis was applied to the reaction time (RT) and movement time (MT) data, resulting in the following significant (.05 level) F ratios:

F RATIOS—REACTION AND MOVEMENT TIME

Source	F
MT (B) vs. MT (C)	5.94
MT (B) vs. MT (A)	9.40
RT (B) vs. RT (C)	8.65
RT + MT (B) vs. RT + MT (C)	14.3
RT + MT (B) vs. RT + MT (A)	12.5

Discussion

Premovement stretch had a significant effect both upon reaction and movement time. For the three movement conditions five rapid muscular stretches (condition B) resulted in the fastest speed of arm movement. Subjects reacting under condition B also were faster than when exposed to condition C. In addition the cumulative time of RT+MT (condition B) was also faster than either RT+MT (A) or RT+MT (C).

In reference to previous investigations, the influence of maximal stretch upon speed and reaction time of a supported limb was found to have no effect upon the speed of the first two-thirds of a limb movement and also had no influence upon reaction time. In a later study, Smith and Whitley investigated the influence of maximal stretch upon the reaction time and speed of movement of an unsupported limb. Reaction time was facilitated and speed of movement was unaffected by the stretch stimulus.

Consideration must be given to the interpretation of the differential effects of stretch upon muscular movement. The muscles of a supported or unsupported limb can be exposed to stretch under a series of conditions—for example, fast, slow and sustained stretch, and catapult-type stretch whereby the limb is abducted and adducted at a fast rate. Another problem to be considered is the possibility of a causal effect and/or the interaction between the mechanical advantage of muscles contracting at different joint angles in addition to the effect of muscular stretch.

It appears that initiating a limb movement from a maximally-stretched position can have a differential influence upon reaction latency and movement time. Physiological evidence which may lend information to these results is supplied by the findings of Libet and Wright who discovered that the end-plate-potential was doubled following the stretching of a slack muscle. Additional stretching resulted in minor increases. The investigators theorized that junctional transmission facilitation associated with stretch is due to an increased production or more effective localization of the "transmitter."

As the general consensus of factor analysis studies have shown that reaction latency and speed of movement are two discrete factors, it may be hypothesized that sustained *maximal* muscular stretch is selective in its neuromotor effects upon these two factors. Libet and Feinstein concluded from their analysis of changes in EMG with changing muscle length that "with maximal volleys in peripheral nerve in man or monkey, the individual EMG spikes decrease in amplitude, broaden and become more complex as the muscle is stretched, suggesting increasing average desynchronization of the action potentials of the individual active components as the muscle is elongated. The decrease in EMG amplitude with stretch is roughly the same when the nerve is stimulated as with maximal voluntary efforts." Therefore it is conceivable that there are individual differences in the optimum degree of muscular stretch under which reaction time and speed of movement may be possibly facilitated. Therefore maximal and/or sustained stretch may have an interfering effect upon muscular innervation as evidenced by the decrease in EMG amplitude associated with increased muscular stretching.

Ralston, in studying the relation between length and tension in voluntary muscle, has demonstrated that when the muscle cannot shorten when stimulated (rest length) it can record more force than when the muscle is stretched prior to stimulation. Smith has also reported that maximal stretch had a negative effect upon static strength. As strength application appears to be inhibited by maximal muscular stretch it appears that factors other than the conditions under which strength is most efficiently applied operate to facilitate motor movement.

The most promising factor in influencing the effect of muscle elongation upon facilitating reaction and movement time appears to be the speed with which muscular stretch is applied. As shown in the present study, rapidly applied stretch has a greater facilitating effect upon reaction time and speed of movement than slower sustained muscular stretch.

Although Sherrington reported action currents concurrent with the passive extension of muscle, his findings have not been corroborated by later experimentalists, including Ralston who contends that to elicit electrical activity muscular stretch must reach at least the threshold speed so as to initiate the normal jerk reflex. He substantiates his hypothesis by citing experimental evidence involving cineplastic amputees in which their muscles were stretched approximately 150 percent relative to their rest length without the recording of any electrical activity throughout the whole range of movement.

Evidence involving the effect of muscular stretch upon muscle spindle activity has been cited from studies which have involved the investigation of both human and animal muscle *in situ* and in isolation, hence hasty generalizations must be resisted. However, Wenger, Jones, and Jones in a discussion of proprioceptive senses state that "these fundamental mammalian reflexes are still of importance in behavior and underlie our own behavior patterns."

It must be understood that, like other specialized sense receptors, muscle spindles do not operate in a vacuum, hence many other factors, such as the influence of the Golgi tendon spindles upon inhibiting contraction and excess tension in extensor muscles must all be taken into consideration in the understanding of overt motor movement.

Kvasov, the Russian physiologist, in his study "Proprioceptive reflexes and their inhibition," is not impressed by the oversimplification of stretch reflexes. He concludes: "The result is that we obtain a biologically justified picture of the functional evolution of stretch reflexes (myotatic) which, for all their simplicity and independence, are under the correcting influence of the central nervous system as a whole in respect of both afferent and efferent links and also the main central link."

With regard to the degree of common variance between individual differences in strength, reaction time and speed of movement, the consensus of experimental findings is that relationships between these variables are very low and there is the strong implication that neuromotor programs exist which are specific to speed, reaction time, and strength.

In light of the present and past experimental findings, it is proposed that specific neuromotor coordinations associated with the effect of muscular stretch upon motor movement are the most important factors in facilitating reaction latency and speed of movement.

Conclusions

Speed of bodily movement essentially revolves around the effectiveness of forces (muscular "strengths") overcoming inertia and moving segmental and body masses. Traditionally speed of movement has been improved by speed training and/or increasing muscular strengths. It was proposed in light of cited physiological research, that under certain specific conditions, exposing limb muscles to muscular stretch, can produce both an increase in speed of reaction time and movement time.

In summary, experimental findings support the following proposals:

1. Reaction and movement time facilitation are influenced by the rate with which muscular stretch is applied to the agonist muscles prior to movement, and
2. Fast application of stretch has a more facilitating effect upon reaction and movement time than when the elongation of the muscles is placed under the stimulus of sustained stretch.

Effect of Progressive Physical Training on the Latent Period of Electrical Stimulation of the Left Ventricle of the Human Heart

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Because of certain limitations in this study, such as the very small number of subjects and the fact that the exercise habits of these men were not controlled, this work must be looked upon as an attempt to detect certain trends in the behavior of the isometric period and associated phenomena of the hearts of trained and untrained men as a basis for later more definite work.

There seems to be a great amount of confusion among authors in the definition, measurement and terminology of the isometric contraction phase of the left ventricle of the heart. Names such as isometric interval, isometric period, isovolumetric interval (second part of isometric period), Q to first heart sound interval (first part of isometric period), all seem to refer to parts of the same interval. However, what confuses the student or reader in this area most is when he has to measure this interval as suggested by the different authors. An intensive study of all the different methods shows clearly that they are not all measuring the same interval, as can be seen by the following definitions:

Q—first heart sound. This is the interval from Q in the ECG to the onset of pressure rise in the ventricle or closure of the A-V valve, which is synchronous with the onset of the first vibrations of the first heart sound, as shown by Wiggers.

This interval is called "Umformungszeit" by Holldack, who is cited by Raab.

Isometric contraction phase. The Q—first heart sound interval is followed by the isometric contraction phase as defined by Wiggers, and by others as the onset of intraventricular rise to ventricular ejection. Harrison referred to this interval as the isovolumic interval.

Purpose

This study was conducted to measure the Q—first heart sound interval through the use of the Velocity BCG in trained and untrained men.

Method Used in the Study

We measured the interval from Q in the BCG to baseline crossing of H in the Velocity BCG. We selected this point in the BCG because Scarborough pointed out that baseline crossing of H in the Velocity BCG corresponds with the onset of the major vibrations of the first heart sound.

Twenty-one subjects were measured, of whom 9 were highly trained. We recorded a mile-run time on each subject a week previous to the quiet tests. All measurements were taken in the resting state before breakfast, from 6:00-8:00 A.M.

Results

It is clear from Table 1 that the Q—baseline crossing of H in the Velocity BCG (Q to first heart sound) is shorter in trained than in untrained people. Hyman reported the same trend in his study on the Q to first heart sound interval. Frank and Kinlaw describe a similar methodology based upon the ECG.

TABLE 1.—AVERAGE MEASUREMENTS FOR TRAINED AND UNTRAINED GROUPS

	Trained	Untrained	Total
Q to baseline crossing of H (sec.)	.112	.133	.124
Mile run time	6:00	7:48	6:54
N	9	12	21
Age	33	35	

The results obtained in this study agree quite closely to the averages obtained in the Cureton-Bannister and Cureton-Liverman data, which were reported in 1964 in Dallas, Texas by Cureton.

TABLE 2.—COMPARISON OF THREE STUDIES

	N	Trained	Untrained	Total
This study (sec.)	21	.112	.133	.126
Cureton-Bannister (sec.)	10	.109	.131	.120
Cureton-Liverman (sec.)	10	.105	.124	.115

In this study the subjects were selected as already trained or not trained, whereas in the Bannister and Liverman studies the middle-aged men were trained progressively for 12 weeks by a mixed calisthenics-running endurance program judged to be equivalent to approximately 300 calories per day, three days per week. All three studies show a shortening of the trained compared to the untrained men.

Effects of 1200-Calorie Diets and Partial Dehydration on Selected Neuromuscular and Cardiovascular Performances of Well-Conditioned College Men[1]

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A number of studies have been conducted concerning the effects of dieting, dehydration, and weight reduction on the physiologic responses of various individuals. Some of the studies have indicated a possible deleterious effect, while others have indicated an innocuous effect. This classification of deleterious or nondeleterious does not imply, however, that because results of a study are classified as deleterious that the data from all the variables tested indicated a detrimental effect, but rather that data from one or more variables indicated a possible harmful effect. Most of the variables tested were the effects of dieting, dehydration, and weight reduction on the cardiorespiratory system, muscular strength and endurance, reaction time, and total body movement time.

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[1] Bibliography may be obtained from the author on request.

Purpose

This study was designed to determine the effects of a 1200-calorie basic food diet with partial dehydration and a 1200-calorie liquid nutritive diet (Nutrament) with partial dehydration on the neuromuscular and cardiovascular performances of well-conditioned men.

Subjects

Twenty-five men volunteered for the study, of whom 24 were considered medically fit. These men were subjected to a vigorous conditioning program that involved endurance running, calisthenics, weight training, apparatus exercises, and sprinting. Then the 12 best-conditioned men were selected on the basis of their performance on the Oregon Simplification of the Physical Fitness Index and the 600-yard run-walk. The PFI average of the 12 men was 111.8; and the 600 yard run-walk times of the group averaged 1:38.6. From these data the subjects were ranked from one to twelve, one indicating the highest fitness level and twelve the lowest.

The 12 subjects' ages ranged from 17 years 9 months to 20 years 3 months; the mean age was 19 years 0 months. The 12 subjects' weight ranged from 142 pounds to 167 pounds; the mean weight was 154.16 pounds. The height of these subjects ranged from 67 inches to 72¾ inches; the mean height was 69.52 inches.

Experimental Design

The 12 well-conditioned subjects were assigned to 4 groups of 3 subjects each. In order to eliminate the possibility of one group getting two or even three men of similarly-ranked ability, the subjects were placed in the groups according to physical fitness ranking, rather than placed according to random selection. For example, subject number 1 (rank) was placed in Group A, subject number 2 was placed in Group B, subject number 3 was placed in Group C, subject 4 in Group D, subject 5 in Group D, subject 6 in Group C, and so on. The groups were then randomly assigned to the various diets described below.

Group D served as the control group while Groups A, B, and C served as the experimental groups. The control group was subjected to a normal diet without water restriction. The three experimental groups were exposed to (a) a normal diet, the same as the control group (b) a 1200-calorie basic food diet with a 12-ounce water or liquid limitation, and (c) a 1200-calorie liquid nutritive diet with a 12-ounce water limitation. The 1200-calorie basic food diet refers to a diet set up by the school physician. The four basic foods were included in an attempt to provide as many necessary minerals and vitamins as possible. The liquid nutritive diet refers to the liquid diet (Nutrament) used in the study. Each can of Nutrament contained 400 calories, so each subject was given three cans a day for a total of 1200 calories. Each of the three experimental groups (A, B, and C) were exposed to the three diets over a three-week period. For example, during the first week Group A was on the liquid nutritive diet, during the second week the basic food diet, and during the third week the normal diet. Each week, therefore, the experimental groups were on a different diet, so that at no time were two experimental groups on the same diet.

After the subjects were placed into the four groups and the diets were assigned they continued to train for one week. On the fifth day of this week the subjects were tested and the results of each of the measurements were recorded. These results served as baseline data, since all the subjects were on a normal diet. The testing procedure enabled the subjects to become familiar with the testing program and it also made it possible for the investigator to correct any unforeseen procedure errors or delays.

The following week inaugurated the outset of the experiment as far as the various diets were concerned. On the first day of the week (test week 1) the subjects began their diets. Group A was on 1200 calories a day of Nutrament with 12 ounces of water, Group B was on the normal school diet with no water restriction, Group C was on the 1200-calorie basic food diet with a 12-ounce water quota, and Group D served as the control group. The diet lasted for five days, at the end of the five-day period the subjects were tested. After the appraisal, the subjects were permitted to return to a normal diet without any food or liquid restriction.

On the first day of the following week (test week 2) the entire procedure was repeated, except that this time Group A was on the 1200-calorie basic food with a 12-ounce water limitation, Group B was on the 1200-calorie Nutrament diet with a 12-ounce water restriction, Group C was on the normal diet, and Group D served as the control group. The diets lasted for five days and on the fifth day the subjects were tested. After the evaluation, the subjects were permitted to return to their normal diet without food or liquid restriction.

The procedure was repeated for a third time during the final week (test week 3) of the experiment. On the first day the subjects began their diets. Group A was on the normal diet, Group B was on the 1200-calorie per day basic food diet, Group C was on the 1200-calorie liquid nutritive diet, and Group D served as the control group. All four groups maintained their diet for five days, and on the fifth day they were tested. This third week of dieting terminated the experiment and the subjects were permitted to return to their normal eating habits.

Test Administration

During the three-week experimental testing program the subjects began their diets on the first day of the week and maintained the diet through the fifth day, excluding the evening meal of the latter. The subjects also continued to train during the testing program.

On the morning of the fifth day, which would parallel a competition day in a sport such as wrestling, the following measurements were taken: resting heart rate and blood pressure; heart rate and blood pressure immediately after cessation of exercise; heart rate 1-1½, 2-2½, and 3-3½ minutes after exercise; and heart rate and blood pressure five minutes after exercising. The standard exercise was the Harvard Step Test, a five-minute step-up and step-down performance on a 20-inch bench at 30 steps a minute.

The men reported individually at appointed times and their appointment times remained the same throughout the experiment. When a subject arrived he was weighed and told to sit for at least 3 minutes. Heart rates were taken for 15 seconds every 15 seconds until two consecutive identical counts were recorded. The heart rate was taken with a stethoscope from the chest. The sitting systolic and diastolic blood pressure was taken next. The blood pressure was measured with a mercury sphygmomanometer and a stethoscope; the cuff of the sphygmomanometer was placed on the subject's left arm. The Barach Energy Index was computed from the resting heart rate and resting blood pressure raw data.

Next, the subject performed the Harvard Step Test. At the termination of the exercise the subject sat down and his pulse rate, taken from the carotid artery, was counted for 10 seconds. Immediately after the pulse rate was obtained the subject's systolic and diastolic blood pressure was measured.

The subject's pulse rate was also taken at 1-1½, 2-2½, and 3-3½ minutes after exercise. These recovery rates, along with the amount of exercise enabled the investigator to compute a Physical Efficiency Index for each subject.

Five minutes after exercise, blood pressure and heart rate measurements were again taken to evaluate the subject's recovery from stress.

In the afternoon the men were tested for reaction time, total body movement time, grip strength, leg strength, and arm strength. As in the morning session, the subjects reported individually and their appointment times remained the same throughout the experiment.

When the subject entered the testing room he reported immediately to the Athletic Performance Analyzer to be tested for reaction time and total body movement time. In this study, reaction time was measured by having the subject rest his thumb against a button. The signal light was directly in front of the subject. The subject was given a verbal "ready" signal prior to each trial; the time between the ready signal and the audiovisual signal was randomly varied between 1 and 3 seconds. When the light flashed and the buzzer sounded, the subject depressed the button thereby stopping the clock that started with the signal. The subject was given seven practice attempts; at the completion of the practice attempts seven recorded trials were begun. After each of the seven trials the time was announced to the subject. From these seven times the median time was selected.

To measure total body movement time the subject stood on a switch mat that was placed on the floor. The subject was given a preparatory "ready" signal prior to each trial; and as with the reaction time measurement, the audiovisual signal delay was randomly varied between 1 and 3 seconds. When the light flashed and the buzzer sounded, the subject jumped off the switch mat to break the circuit. The method of jumping and breaking the circuit was a quick shuffle movement of the feet forward by bending the knees. The subject was given seven practice attempts. At the completion of the practice attempts the recorded trials were begun. The subject was given seven recorded trials and after each trial the total body movement time was announced to each subject. The median time was selected.

After the recording of the reaction and total body movement times the subject was tested for grip strength with a hand manuometer. Each subject was given three trials, the best result was selected.

Upon completion of the grip strength measurements the subject was tested for leg strength with the leg dynamometer. The best of three trials was recorded.

After the completion of the leg lift the subject reported to the parallel bars where he performed bar dips.

Upon completion of the bar dips the subject was given a 5-minute rest period, timed with a stop watch, before he was tested for pull ups on the rings.

These three tests, leg lift, parallel bar dips, and pull ups served as data for the Oregon Simplification of the Physical Fitness Index.

Analysis of the Data

An analysis of variance single factor experiment with repeated measurements was used in analyzing the weight loss; heart rate and blood pressure before, after, and 5 minutes after exercise; the Barach Energy Index (EI); the Physical Efficiency Index (PEI); the Physical Fitness Index (PFI); the Strength Index (SI); the reaction time; the total body movement time; and the grip strength of the subjects in the experimental groups.

The rotation of the groups was considered a control factor and not as an ordered experimental term; the treatments were diets, the n was nine. The subjects who participated in the dieting program (the experimental subjects) were grouped together. The procedure enabled the investigator to obtain mean measurements of the experimental subjects for each of the three diets to which they were exposed.

The control group was treated separately by doing a different analysis of variance on their scores; the same process as described above was used, except the treatments were weeks rather than diets, the n in this instance was three. A third set of analyses of variance were also calculated for the experimental groups with the treatments based on weeks (time).

The F ratio was calculated and the level of significance determined. Where an F ratio was significant at the .05 or .01 level of confidence, the individual mean differences were evaluated for significant differences using the Newman-Keuls procedure.

Results of the Study

Analysis of variance summaries indicated that there were no significant differences at the .05 level between the mean performances of the subjects while on the normal, basic, and liquid diets regarding blood pressure and heart rate measurements before, immediately after, and 5 minutes after exercise. There were also no significant differences at the .05 level in the mean scores on the Energy Index, Physical Efficiency Index, Physical Fitness Index, Strength Index, reaction time, total body movement time, and grip strength. There was, however, a statistically significant ($P = .01$) weight loss when the subjects were on the 1200-calorie basic food and liquid nutritive diets. The 1200-calorie basic food diet produced a 4.07 percent loss of body weight on the average. The 1200-calorie liquid nutritive diet produced a 4.73 percent loss of body weight on the average.

The analysis of variance summaries calculated for the control group indicated there were generally no significant differences at the .05 level between the group means regarding blood pressure and heart rate measurements before, immediately after, and 5 minutes after exercise. The single exception was diastolic blood pressure of the subjects before exercise, which increased significantly ($P = .01$) the third week. There were no significant differences at the .05 level between the mean performances of the subjects during the three-week period regarding Physical Efficiency Index, the reaction and total body movement times, and the grip strength. There were, however, significant increases ($P = .05$) of the subjects' Energy Index, Physical Fitness Index, and Strength Index. These results tended to indicate that the subjects continued to increase their physical fitness, as they were on normal diets each week, even though they had been on hard conditioning programs for six weeks.

In order to evaluate what effect the experimental dieting had on the experimental groups, analyses of variance were calculated with the treatments based on weeks (time). Significant differences ($P = .05$ and $P = .01$) were found between the mean performances of the subjects during the three weeks regarding pulse rate before exercise, diastolic blood pressure after exercise, Energy Index, Physical Efficiency Index, Physical Fitness Index, and Strength Index. These results indicated that the subjects were also continuing to increase their physical fitness in spite of the restricted calorie intake, dehydration, and average weight loss of four to five percent. No significant differences at the .05 level were found in the other measurements taken.

Conclusions

Within the limitations of this study, it was concluded that a 1200-calorie diet, with a 12-ounce daily water restriction, for a period of five days will not adversely affect neuromuscular and cardiovascular performances of well-conditioned men. Men subjected to 1200-calorie diets will continue to improve their level of physical fitness when subjected to a vigorous physical conditioning program. Of the two diets, 1200-calorie basic food or 1200-calorie liquid nutritive, neither proved to be the better regarding weight loss or performance levels. A 1200-calorie diet, with a 12-ounce water restriction, is sufficient to cause a significant decrease in body weight.

Reports

President's Report

ARTHUR WESTON

The year 1965 has been a most interesting and challenging year for me as President of the NCPEAM. The major achievement this year was to complete the work of making *Quest* magazine a joint publication of the NCPEAM and the NAPECW. While this involved a tremendous amount of work on the part of the officers of both organizations, it was carried out in a spirit of cooperation and professional enthusiasm. *Quest* magazine can become one of the very important decisions made by this organization. The *Quest* Board includes:

Editor: Pearl Berlin
Associate Editor: Marvin Eyler
Business-Circulation manager: David Bischoff

Additional board members are:

NCPEAM: Earle Zeigler (Chairman)
NAPECW: Margaret Moody
NCPEAM: Delbert Oberteuffer
NAPECW President: Celeste Ulrich
NCPEAM President: Arthur Weston

As President of NCPEAM I have completed the following:

- Appointed all committee members and chairmen and secured approval for these appointments by the Executive Council.
- Carried out my responsibilities as a member of the Program Planning Committee and Time and Site Selection Committee.
- Served as NCPEAM official delegate to the AAHPER Representative Assembly in Dallas, Texas, in March, 1965.
- Continued work on a model hotel contract for the NCPEAM. (Much credit on this assignment goes to Dean Richardson of the University of Minnesota.)
- During the summer of 1965, it was my privilege as president of the NCPEAM to represent this Association in speaking at physical education and sport meetings in Japan, New Zealand, and Australia. The focal point of my addresses on these occasions was on the value of physical education in American education.
- I have represented the NCPEAM as a speaker on physical education at New York City and Long Island high schools. I have served as consultant on facilities and equipment with the New York City Board of Education.

I wish to recognize the support of the administrators at Brooklyn College for providing services and special assistance required to carry out the responsibilities of President of the NCPEAM.

I wish to express my appreciation to the officers, committee chairmen, and members who have rendered efficient and devoted service to this Association during the past year. Special thanks go to Richard Donnelly who served as both President-elect and President during the summer of 1965 while I was travelling in foreign countries. And I would like to extend my personal appreciation and the appreciation of the members of the NCPEAM to David O. Matthews. As our Secretary-Treasurer, he has been an able and devoted officer of this Association. In my judgment, it has been a very successful year, and it has been successful because all the members with special responsibilities have carried them out exceedingly well.

The opportunity to serve as President of this organization has been one of the highlights of my professional career. I thank you for giving me this opportunity.

Statement of Receipts and Disbursements
For the Fiscal Year Ended November 30, 1965

EXHIBIT A

OPERATING BUDGET FUND

Fund Balance, December 1, 1964			$3,946.79
Receipts:			
Membership Dues		$6,445.65	
Banquet Fees		250.88	
Publication Proceeds		1,486.20	
Redeposit of Registration Fund (See Disbursements)		195.00	
Total Receipts			8,377.73
			12,324.52
Disbursements:			
Printing Newsletter and Stationery		710.05	
Supplies and Postage		816.82	
Stenographer's Services		267.73	
Secretary-Treasurer's Fee		300.00	
Audit		110.00	
Affiliated Organization Fees		60.00	
Insurance Bond		12.50	
Transfer to Permanent Fund (Exhibit B)		300.00	
Quest Magazine Account		240.00	
Necrology Expense		8.42	
Bank Service Charges		15.73	
Convention Expense:			
Registration Fund (See Receipts)	$195.00		
Hotel and Banquet Charges	275.43	470.43	
CPEA Annual Proceedings Publication		3,736.06	
Convention Expense—Tom Evaul (December, 1965)		600.00	
Total Disbursements			7,647.74
Fund Balance, November 30, 1965			$4,676.78

BANK RECONCILIATION

Balance Per Bank Statement		$4,705.03
Less Outstanding Check #444	$ 25.00	
#448	3.25	28.25
Fund Balance, November 30, 1965		$4,676.78

SUMMARY OF FUNDS ON HAND

November 30, 1965

Checking Account—The Champaign National Bank, Champaign, Illinois	$4,676.78

EXHIBIT B

PERMANENT FUND

Fund Balance, December 1, 1964		$1,223.17
Additions:		
Transfer from Operating Budget Fund (exhibit A)	$300.00	
Interest Earned During Year	50.40	
Total Additions		350.40
Fund Balance, November 30, 1965		$1,573.57

SUMMARY OF FUNDS ON HAND

November 30, 1965

Account #2614—Northern Valley Savings and Loan Association, Tenafly, New Jersey	$1,573.57

Financial Report on Quest Account

STATEMENT OF RECEIPTS AND DISBURSEMENTS
BANK OF TUCSON, TUCSON, ARIZONA

from January 1 to September 1, 1965

Deposits			**Disbursements**		
NCPEAM	$240.00	5/29/65	S.C.	.64	1/12/65
			3rd Class Mailing	30.00	1/ 2/65
QUEST SALES	54.60	2/ 3/65	S.C.	1.00	2/ 5/65
	26.60	2/ 3/65	Postage and Card File	9.00	2/ 5/65
	51.20	2/26/65	Postage	5.00	2/26/65
	18.00	2/26/65	Mailco	7.50	3/16/65
	41.80	3/26/65	S.C.	1.00	3/ 5/65
	39.80	3/26/65	S.C.	.57	4/ 9/65
	16.00	4/30/65	3rd Class Mailing	170.16	4/22/65
	45.00	5/29/65	Postage	6.25	4/30/65
	16.00	5/29/65	S.C.	.50	5/10/65
	44.80	7/22/65	F. W. Faxon Co.	3.80	5/24/65
	12.00	7/22/65	D. M. Miller (Postage)	38.85	6/ 3/65
	59.20	7/22/65	Mimeo Bureau	160.00	6/ 7/65
	23.40	8/25/65	Postage	5.00	6/ 9/65
	$789.88		D. Matthews - (NCPEAM)	80.00	6/28/65
			D. M. Miller (Postage)	11.04	6/29/65
			F. B. Roby (Postage)	99.53	8/27/65
Fund Balance	$158.67		S.C.	1.37	8/30/65
Mailed to Dr. David Bischoff		8/31/65		$631.21	

Submitted by
Fred B. Roby
NCPEAM Representative
to *Quest*

Quest Account

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

August 20, 1965 to November 30, 1965

Balance August 20, 1965		
Receipts:		
Transfer of Funds:		
Virginia Morris		
University of Oklahoma	$486.20	
Fred Roby		
University of Arizona	$158.67	$ 644.87
Sales		466.40
		$1111.27
Disbursements:		
Refunds	$ 12.00	
Bank Service Charges	2.95	
Postage	2.60	
Office Supplies	214.22	$ 231.77
Balance November 30, 1965		
Petty Cash on Hand	$ 25.00	
First National Bank Amherst	$854.50	$ 879.50
		$1111.27

Submitted by
David Bischoff
Quest Business Manager

Quest Organization Report

CELESTE ULRICH
President, NAPECW

The NAPECW Board, with the knowledge and consent of NCPEAM President Arthur Weston, has structured *Quest* in the following manner: as to editorship:

Pearl Berlin, Editor, July 1965 through June 1967
Marvin Eyler, Associate Editor, July 1965 through June 1967
Marvin Eyler, Editor, July 1967 through June 1969
NAPECW Appointee, Associate Editor, July 1967 through June 1969
NAPECW Appointee, Editor, July 1969 through June 1971
NCPEAM Appointee, Associate Editor, July 1969 through June 1971

You will note that with the exception of Dr. Berlin, appointees for the editorship of *Quest* will be made by the two sponsoring organizations alternately for terms of four years. The first two years of the appointee's term will be in the role of Associate Editor and the last two years will be in the role of Editor.

Business-Circulation Manager. David Bischoff has been elected by the NAPECW Board to fill this post. The position and the election has the support of the NCPEAM and will be confirmed by the NCPEAM Board at its next meeting. Dr. Bischoff has accepted the position of Business-Circulation Manager for "a period of not less than three years." This election and the consequent acceptance was made with the implication that if at the end of three years Dr. Bischoff would be interested in continuing with the position and if the *Quest* Board would be interested in retaining the services of Dr. Bischoff, the time limits of the job would be extended.

Quest *Board.* A *Quest* Board of five members shall be established. Three members shall be appointed and the Presidents of NAPECW and of NCPEAM shall serve as ex officio members. Appointment to the Board shall be for three year terms. NAPECW will appoint in even-numbered years and NCPEAM in odd-numbered years. The Chairman of the *Quest* Board shall be the appointed member who is in the final year of appointment. During the first year of operation, NAPECW will appoint one of its members for a one-year term who shall serve as Chairman and one for a three-year term. NCPEAM will appoint one of its members for a two-year term during the first year of operation. In July, 1966 NCPEAM will make the 1966-67 appointment and in July, 1967 NAPECW will make the 1967-68 appointment. It will be noted that odd and even years are reckoned from the last year of the appointee's term. It shall be the responsibility of the *Quest* Board to determine the board operational policies concerning finance and publication. The establishment of the editorial policy is the prerogative of the Editor. The *Quest* Board shall serve in an advisory capacity to the Editor and Business-Circulation Manager who shall report annually to the *Quest* Board. It shall be the responsibility of the senior appointee of each organization to make a report to his organization in a manner and at a time determined by the organization.

Editor Responsibilities. It shall be the responsibility of the Editor and Associate Editor to work in any way that they see fit conducive to the publication of *Quest*. It is expected that *Quest* will continue its twice-yearly publication and that the issues will be published about December and April each year. The Editor may proceed in any way that he sees fit and is responsible for editorial policy to the sponsoring organizations only to the degree of good taste and appropriateness of content.

Business-Circulation Manager Responsibilities

1. Printing, labelling, and mailing shall be the responsibility of the Business-Circulation Manager. The mailing list for NAPECW shall come from the NAPECW Treasurer and that for NCPEAM from the designated Board member of NCPEAM.
2. The Business-Circulation Manager shall present a proposed budget for the following year to the *Quest* Board.
3. The Business-Circulation Manager shall present to the *Quest* Board an annual audit by a certified public accountant. The cost of the audit shall be borne by the *Quest* Fund.
4. The Business-Circulation Manager shall receive after July 1, 1965 and before September 1, 1965 all monies and records from the current NAPECW and NCPEAM business managers.
5. Ordinarily, expenses of the Business-Circulation Manager shall come from *Quest* Fund.
6. Determination of publicity regarding *Quest's* availability shall be the responsibility of the Business-Circulation Manager with advice from the *Quest* Board sought in determining such policy.

Financing of Quest

1. NAPECW and NCPEAM shall financially support *Quest* on the basis of $1.50 per member per year.
2. Copies of *Quest* requested by the sponsoring organizations shall be charged to the respective organizations at the rate of 75c per copy.
3. The sales price of individual copies of *Quest* shall be $2.00 and library subscriptions shall be $4.00 per year.
4. The underwriting of courtesy copies used for public relations will come from *Quest* Fund.

Quest *Fund*

1. The Business-Circulation Manager shall be responsible for all *Quest* monies.
2. Each sponsoring organization shall put in the *Quest* Fund sufficient monies to cover the $1.50 per member per year obligation. The time that these monies shall be deposited shall be determined by the Business-Circulation Manager in consultation with the Treasurers of the sponsoring organizations.
3. All monies received from library subscriptions or the sale of individual copies of *Quest* shall go into the *Quest* Fund.
4. The *Quest* Fund should be responsible for all expenses incidental to the publication, circulation, and business of *Quest.*

Suggestions for the Quest *Editor*

1. It shall be up to the editor to select a *Quest* Editorial Committee if that is desirable within the editor's plan of operation. It is expected that the Editorial Committee (if used) will be composed of members of the sponsoring organizations.
2. A statement of editorial policy regarding the belief of the editor during his or her term of office should be stated in the first issue which is published under a new editor.
3. Determination should be made regarding the continuation of the monograph concept.

Suggestions for Referral to Quest *Board*:

1. Distribution of courtesy copies of *Quest* for public relations purposes.
2. Granting permission for authors to use articles from *Quest* in various publications.
3. Legal steps to place the copyright of *Quest* articles in the hands of *Quest.*
4. Internal Revenue status.
5. Legal "working agreement" of two sponsoring organizations to take care of finances in case of cessation of *Quest* publication.

Minutes, Executive Council

EXECUTIVE COUNCIL MEETING

December 27, 1965
Philadelphia, Pa.

Present: Weston, Donnelly, Nixon, Havel, Moore, Ryan, Asprey, Hixson, and Matthews.

1. Meeting was called to order at 7:10 P.M.
2. Minutes of the Executive Council meeting of January 9, 1965 were approved as printed in the *Proceedings.*
3. Donnelly reported on the preparation of the program for the convention which is to follow in the next three days. He expressed his appreciation to all of the Section Chairmen for meeting all program deadlines.
4. Matthews presented the financial report (audit) for the fiscal year just ended, December 1, 1964 to November 30, 1965. Report was accepted for submission to the Finance Committee.
5. Matthews reported on the difficulties encountered in the changeover from the $5 dues structure to the retroactive $10 dues structure. In the past year, 524 persons paid the $10 dues while 202 paid only the $5. It was proposed that those persons who paid the $5 should get something for their money. Moved by Hixson and seconded by Havel that those persons who paid only $5 during the past fiscal year be sent a copy of the *Proceedings* along with a letter of explanation from Richard Donnelly as to why they were receiving the *Proceedings.* Motion passed.

6. Bischoff reported on *Quest*. The report from Celeste Ulrich, President of NAPECW, on the organization of the *Quest* administration which had been addressed to Pearl Berlin, Marvin Eyler, and Dave Bischoff in July of 1965 was distributed. In that report, the editorships were listed, the business-circulation manager was named, the *Quest* Board organization was presented, and the financing of *Quest* was discussed. Moved by Donnelly that the report be accepted. Seconded by Asprey. Motion approved unanimously. The *Quest* Board was to have met in Philadelphia but the meeting was deferred to the AAHPER Convention in March, 1966. Considerable discussion was held on the future financing of *Quest*. Hixson moved that, if necessary, an increased payment be authorized from the original $1.50 per member to $2.00 per member, based on an estimated 600 NCPEAM membership for the *Quest* budget if a mutual agreement on such an increase can be reached with NAPECW at a March, 1966 *Quest* Board meeting. Seconded by Donnelly. Motion carried.
   Moved by Matthews that a *Quest* budget for 1966-67 is to be submitted for review at the March meeting of the NCPEAM Executive Council and then the 1967-68 budget be submitted in December, 1966 at the San Diego meeting and henceforth on an annual basis. Seconded by Nixon. Motion passed.
7. The results of the work of the Time and Site Committee were read by Weston. The list of host schools for the meeting after San Diego was narrowed to two. Houston was the first choice and New Orleans the second. Moved by Nixon that Houston as the site and January 10, 11, 12, 13 the time of the 1968 (71st) convention be approved. Seconded by Asprey. Approved unanimously.
   Moved by Matthews that the invitation from Rice University to act as the host school with Frank Bearden as convention manager be accepted. Seconded by Havel. Motion carried.
8. Weston read the report from the Resolutions Committee. Nixon moved that resolution number 1 be accepted. Seconded by Havel. Motion passed. Nixon moved that resolutions 2 and 3 be rejected and that the Committee be instructed to seek alternatives.
9. Meeting adjourned at 9:30 P.M.

EXECUTIVE COUNCIL MEETING

December 28, 1965
Philadelphia, Pa.

Present: Weston, Donnelly, Nixon, Asprey, Havel, Moore, Hixson, Ryan, and Matthews.

1. Meeting was called to order at 8:00 A.M.
2. A discussion was held on the business of a hotel contract form. A report from Dean Richardson was presented by Donnelly. It was pointed out by Nixon that some sort of written agreement between a hotel and the convention manager and the NCPEAM officers should be drawn up for each convention.
3. Moved by Donnelly that David Bischoff's appointment as Business-Circulation Manager for *Quest* be confirmed by the NCPEAM. Seconded by Asprey. Motion passed unanimously.
4. Nixon reported on the outcome of the Physical Education Design Conference held in Chicago in October of 1965. Discussion was held on how the NCPEAM may assist the AAHPER in implementing the recommendations coming out of the Design Conference. Moved by Hixson that Donnelly inform the AAHPER that the NCPEAM is willing to support the Physical Education Division of the AAHPER in its effort to implement the recommendations coming out of the Design Conference. Seconded by Ryan. Motion carried.
   Moved by Havel to rescind the above motion in order to reword it. Seconded by Nixon. Motion carried.
   Moved by Hixson that the above mentioned letter be directed to the President of the AAHPER and copies be forwarded to the Physical Education Division Vice-President and Vice-President Elect of the AAHPER. Seconded by Moore. Motion carried.
5. Nixon moved that a President's Committee on legislation be established and that said committee outline its duties and functions. The Committee would report its progress at the March meeting. Seconded by Ryan. Motion passed.
6. A discussion was held on ways and means to involve more effectively the section chairmen-elect. It was suggested that the Operating Code Committee and Constitution Committee study the problem and make recommendations to this point.

7. Donnelly moved that the Finance Committee Chairman should be present at the first Executive Council meeting to present the proposed budget. Seconded by Weston. Motion carried.
8. Hixson moved that some material presentation such as a plaque be made to the outgoing president and to those living former presidents. Seconded by Asprey. Motion carried.
9. Holter presented a report on the proposed budget. Asprey moved its acceptance. Seconded by Havel. Motion carried.
10. Nixon moved that the Executive Council should give a vote of thanks to President Weston for a job well done. Seconded by Matthews. Carried unanimously.
11. Meeting adjourned at 9:55 A.M.

EXECUTIVE COUNCIL MEETING

December 30, 1965
Philadelphia, Pa.

Present: Donnelly, Weston, Alley, Matthews, Cutler, Schnitzer, Odenkirk, and Fritz.

1. Meeting was called to order at 7:30 A.M.
2. Minutes of previous meeting were read and approved as read.
3. Donnelly lead a discussion on the San Diego convention. Carl Benton, Convention Manager, outlined the advantages and disadvantages of several hotels in San Diego. Moved by Donnelly that the Hotel El Cortez be the convention hotel and that the dates of the convention be December, 28-31, 1966. Seconded by Cutler. Motion carried.
4. Alley presented an outline of the proposed program for the San Diego meeting and asked for suggestions, some of which were incorporated into his planning.
5. LeBar inquired about the feasibility of the Intramural Section setting up a project to be paid for from the proceeds of the sale of the *National Touch Football Rules*. He was asked to formulate a project with a budget.
6. Meeting adjourned at 8:45 A.M.

Minutes, Association Business Meetings

FIRST GENERAL SESSION

December 28, 1965
Philadelphia, Pa.

1. Meeting was called to order by President Weston at 3:40 P.M.
2. Tom Evaul, Convention Manager, made announcements about the Convention.
3. Harold Jack welcomed the NCPEAM members as guests of Temple University.
4. Main address was delivered by B. Sandler.
5. Committee Reports
6. The Constitution Committee report was accepted and the amendments proposed were voted on by the assembly. All amendments were accepted.
7. Meeting was adjourned at 5:05 P.M.

SECOND GENERAL SESSION

December 29, 1965
Philadelphia, Pa.

1. Meeting was called to order at 10:45 A.M. by President Weston.
2. Treasurer's report was given by Matthews. The report was accepted.
3. Committee reports were made.
   (a) Nominating Committee slate was:
   President-Elect .... Louis E. Alley and Charles Kovacic
   Secretary-Treasurer------David O. Matthews
   Members-at-Large ..... Chalmer Hixson and Spurgeon Cherry
   The election was held with Louis E. Alley, David Matthews, and Spurgeon Cherry being elected to the offices stipulated above.
   (b) Membership Committee report recommended the following for honorary membership: Clair Langton, Sidney Jenkins, Fay Bartlett, Rudolph Lavik, David Brace, Caskey Settle, Roy Ilowit, and John Lawther. The Assembly voted the above named persons honorary membership status.
   (c) Finance Committee report was the proposed budget for 1965-66 fiscal year. Approval and acceptance was moved, seconded, and carried.
   (d) Time and Site Committee moved that the meeting after San Diego be held at Houston, Texas on January 10, 11, 12, and 13, 1968. Motion seconded and passed.
4. Meeting was adjourned at 12:00 noon.

Standing Committees

CONSTITUTION COMMITTEE

The proposed changes (all concerning by-laws) are:

1. Article 1, Section 2a
   Presently reads
   a. The Membership Committee, as provided in Article IX, Section 4, shall review the qualifications of all applicants for active membership and report its findings to the Secretary-Treasurer. A satisfactory report by the Membership Committee shall empower the Secretary-Treasurer to carry the person on the membership roster, so long as he remains in good standing as provided in the following section.
   Proposal—Delete
2. Article 1, Section 2 Presently reads (If #1 adopted)
   Active members are men actively engaged in teaching or administering one or more components of college physical education, men with teaching experience pursuing graduate study, or men engaged or interested in allied fields.
   Proposal—Add "Applications for membership must be accompanied by supportative letter from member in good standing."
3. Article II, Section 2
   Presently reads—Concerns general powers of Executive Council, but does not include item herewith proposed.
   Proposal—Add "(e) make appointments to fill vacated offices not otherwise provided for."

Respectfully submitted,
Keith Bowen
Chairman

FINANCE COMMITTEE REPORT
PROPOSED BUDGET FOR THE NCPEAM FOR 1966

Reserved fund carried over December 1, 1965		$4676.78
Receipts:		
Membership Dues	625 at $10.00	$6250.00
Publication Sales		
Total Receipts		$ 300.00
		$11,226.78
Expenditures:		
Proceedings		$2705.67
Annual Meeting		$ 600.00
General Operations		$1500.00
Newsletter		$ 800.00
Services		$ 300.00
Investment		$ 300.00
Contingency		$ 100.00
Quest (625 at $2.00)		$1250.00
Total Expenditures		$7555.67

Respectfully submitted,
Frederick Holter
Chairman

INTERNATIONAL RELATIONS COMMITTEE

It is not negative to state that this was not an active section during the past year. This need not be and should not be so in the future. It is to this end that the Committee has by correspondence directed its attention. We appreciate the efforts of President Weston and of President-Elect Donnelly to assist us.

At the time of our Committee's formation, no section meeting had been asked for for the Philadelphia convention and none was possible. We are assured that consideration has been given to this at our next convention. This is a must. (Correspondence is valuable and necessary to section operation, but it is not adequate in itself.)

We are confident that there is greater interest among the members of our organization than is evidenced by the present picture. Many of the NCPEAM are actively engaged with ICHPER, with the Foreign Relations Section of AAHPER, with the Peace Corps, and with the people-to-people Sports Committee, for example. Others, having served on overseas assignments in Fulbright, Fulbright-Hays, and other programs retain their strong interest in international developments and form an invaluable reserve of experience.

We all understand that the need for increased international cooperation in sports and physical education exists and will be intensified. There are indications that programs of exchange will be broadened by our federal government. The NCPEAM should look forward to this with a full understanding of its role in shaping the direction such developments will take.

There is overwhelming evidence that despite personal successes by some of our overseas assignees, some underdeveloped countries are not prepared for and cannot afford the luxury of the permissive-type programs that we have been able to afford in our country. Some of our neighbors to the South with a European background in sports and physical education may be looking again in that direction for much-needed help and leadership.

Some of the efforts of our Committee have been personal, and though small, in the long view they may be important:

1. Contact has been made with the Chairman, International Relations Section, AAHPER, offering our cooperation.

2. With the approval of President Weston, we have begun the slow assembly of a resource list of personnel with international experience, and we have begun the solicitation of state presidents and editors of newsletters and journals asking their help in the above.
3. We have arranged for a review of films with the International Film Bureau, 332 South Michigan Avenue, Chicago, Illinois.
4. We have commended the editor of the *Journal of the Canadian Association for Health, Physical Education and Recreation* on his article carried in the AAHPER *Journal of Health, Physical Education, and Recreation.* We have suggested that he submit additional articles dealing with Canadian programs.

For the immediate future we recommend the following action for consideration:

1. The re-establishment of regular section meetings accompanying our convention.
2. The development of resource lists of members with international experience or interest in overseas assignments. This would be helpful to selection committees such as that for Fulbright-Hays in locating our best personnel.
3. Continued effort at the establishment of a cooperative working relationship with ICHPER, and the International Relations Section of AAHPER.
4. A study of ways to increase cultural and informational exchange with the approximately 80,000 foreign students now in our country or to profit from the experience of the hundreds-of-thousands of our own students with foreign study and travel backgrounds.
5. The development of a program through which the benefits of exchange and understanding may accrue from the 1968 Olympics to our immediate neighbor country, Mexico.

Respectfully submitted
Maurice A. Clay
Chairman

HISTORICAL RECORDS COMMITTEE

The body of materials presently in the NCPEAM archives was sorted, cleaned, reorganized, and packaged for return to the repository at Queens College. A list of holdings was drawn up. The list indicates the broad categories of materials in the collection. Through contributions made by professional organizations and individual members, more than twenty different copies of the *Proceedings* were added to the still incomplete collection of NCPEAM publications.

The important problem of planning for new acquisitions remains unsolved. A detailed memorandum concerning this problem will be transmitted to the new Chairman of the Historical Records Committee and to the President of the Association.

Respectfully submitted,
Lawrence F. Locke
Chairman

MEMBERSHIP COMMITEE

The activities of the Membership Committee for the fiscal year ending December 1, 1965 have included: (a) Recruitment of new members, (b) Encouragement of delinquent members to reinstate, (c) consideration of improvements of the operating code of this Committee, and (d) The compilation of a list of members to be recommended for honorary membership.

Recommended for honorary membership are the following retired persons with a record of many years service to this Association:

Clair Langton
Sidney Jenkins
Fay Bartlett
Rudolph Lavik
David K. Brace
Caskey Settle
Roy Ilowit
John Lawther

This committee further recommends that the chairman for the ensuing year be authorized to invite a member representative of each state to serve on this Committee and assist in the recruitment of new members in their respective states.

Finally, this Committee recommends that a concerted effort be made to recruit new members from the faculties of the junior colleges throughout the country.

Respectfully submitted,
Carl Peterson
Chairman

NECROLOGY COMMITTEE

On September 17, 1965 letters were sent to a representative of the NCPEAM in each of the fifty states, Canada, Puerto Rico, Nigeria, England, and New Zealand, requesting each one to make a survey to determine if any member had died during the year 1965, and, if so, to prepare an appropriate memorial statement for him. A week later a letter was mailed to each member of the Necrology Committee asking that he in turn contact the members listed on his roster to remind them to make the survey and a report if a deceased member was found in their respective territories. On November 30, 1965 a reminder note was sent to each member of the committee asking for a last-minute check.

At the time of this report, five deaths have been reported among our membership. The names of these members are: Amos Alonzo Stagg, Sr., Thomas Bruce Kirkpatrick, Guy W. Nesom, Howard G. Danford, and Jay B. Nash. A memorial statement for each of these members has been formulated and edited and will be presented to the membership at the Annual Meeting and then submitted to the Secretary-Treasurer for publication in the *Proceedings*. Certificates for each of the above named deceased members will be completed, framed, packaged, and mailed to the nearest of kin. The bill for the expenses involved in these matters will be submitted to the Secretary-Treasurer fos that proper reimbursement can be made.

The chairman has requested that in case a death occurs after December 1, 1965 the memorial will be submitted to him at the time of the annual meeting. This will provide an opportunity for the membership present to submit memorial statements for deceased members not recorded by the Necrology Committee.

The chairman takes this opportunity to thank members of the Necrology Committee, Carl W. Benton, Al Schram, H. Steven Brown, Don Veller, and Dominick Taddonio, and each of the state representatives for their assistance in carrying out the affairs of the committee.

Respectfully submitted,
Loyd M. Barrow
Chairman

SANFORD E. CARVER (1890-1965)

In May, 1965 Sanford E. Carver passed away following a long illness. He was a resident of Bellingham, Washington, at the time of his death.

Mr. Carver was born in Indiana and came west as a boy. He attended Washington State College when it was Bellingham Normal School. After graduating in 1914, he became a member of the college staff. He remained there as a teacher and administrator during his entire professional life, and was named chairman of the Men's Physical Education Department. He held this position until 1955 when he retired. He held a Master of Science degree in physical education.

The new gymnasium at Western State College which was dedicated in 1961 was named in his honor. During his years at Western, Mr. Carver coached most of the sports offered by the college on an intercollegiate level. In addition to these duties, he taught professional courses for many years.

During his tenure at Western, Mr. Carver saw the development of the college and the department evolve through three changes in structure and function. He played a major part in the development of the physical education department from a two-man staff to one of seven members. He was active in many professional organizations, mostly at the state and regional level. He was highly respected as a congenial, effective teacher whose rapport with students was unparalleled in his college. He was held in high esteem by his colleagues and former students.

Mr. Carver is survived by his widow, Jessie Carver, who resides in Bellingham, and by a son Richard, who is an executive with the Pacific Northwest Bell Telephone Company.

HOWARD G. DANFORD (1904-1965)

Howard C. Danford, 61, Professor of Physical Education and Recreation and golf coach at Colorado State College, Greeley, suffered a fatal heart attack on January 29, 1965 while narrating a demonstration on "power volleyball" during the College's Mid-year Conference on Education.

Dr. Danford received a Bachelor of Arts degree from Ohio University in 1928, and Master and Doctor of Education degrees from New York University.

He served as Recreation Supervisor at Kansas City, Missouri; Lima, Ohio; and Madison, Wisconsin. He was an elementary and junior high school instructor in Zanesville, Ohio. He served ten years as Director of Athletics and Head of the Division of Physical Education at Florida State University, and came to Colorado State College in August, 1949.

Dr. Danford was author of two books: *Recreation in the American Community* and *Creative Leadership in Recreation*. He also wrote numerous articles on recreation for magazines. He was a national authority on volleyball.

He served as secretary of the Ohio Recreation Association, president of the Wisconsin Recreation Executive Association, president of the Florida Recreation Association, chairman of the Public Recreation Section of the American Association for Health, Physical Education and Recreation, and was a member of Kappa Delta Phi and Phi Delta Kappa Educational Societies. He served as chairman of a National Committee that developed "Goals for American Recreation." At the time of his death, he was active in the Colorado Recreation Society and was called on frequently to speak throughout the state and nation.

It is tragic that many teachers and recreation leaders of the future will not have the opportunity to receive directly the wholesome philosophy of Dr. Danford. He was an inspiration to many, and the fields of education and recreation have lost one of their philosophers, experts, and authors. However, he left a legacy of wisdom for those he counseled in the classroom, in the gymnasium, and on the golf course.

THOMAS BRUCE KIRKPATRICK (1881-1965)

Thomas Bruce Kirkpatrick, Professor Emeritus of Physical Education at Columbia University, was born August 23, 1881 in Nova Scotia, Canada and died February 9, 1965 in Kingston, New York.

Mr. Kirkpatrick held the B.P.E. from Springfield College (1907), a B.S. from Teachers College, Columbia University (1910) and a M.A. from Columbia University (1911). He joined the College Physical Education Association in 1932 and was an active member until his retirement from Columbia in 1948 when he became an honorary member of the Association.

He taught and coached at the YMCA in Boston, at the Maxwell Training School for Teachers, and at Newton High School in New York City before joining the Columbia faculty. As a student he played football and hockey. Gymnastics and tumbling were a life-long professional interest.

He was author of the book *Fundamentals of Health*. This text had a profound influence on the early relationship of Health and Physical Education in the program of professional preperation. He was also a pioneer, with George L. Meylan, in the development of camping in the early part of this century.

Thomas Bruce Kirkpatrick's years of professional service at Columbia were marked by a significant fact—he was a man who was considered a fine scholar by men who constituted that community of scholars.

His family, his university, and his profession will mourn his passing and be glad for the privilege of his association over the years.

JAY B. NASH (1887-1965)

Jay B. Nash was born in Ohio in 1887. Perhaps it was there among the wide open spaces and under the broad expanse of the midwestern skies that he learned to love and revere the out-of-door and recreative aspects of life.

Dr. Nash was graduated from Oberlin College in 1911. He did further study at Columbia University and the University of California and received the Doctor of Philosophy degree from New York University. Springfield College conferred upon him the honorary degree of Master of Science.

The teaching and administrative experiences of Dr. Nash were long and varied, and they were accomplished with dedicated skill. During the years 1919–26 he was successively superintendent of recreation in Oakland, California, and director of physical education for the state of California for two years. In 1926 he went to New York University and in 1930 was appointed chairman of the Department of Health, Physical Education and Recreation where he served until the early 1950's. After leaving New York University, Dr. Nash was Dean of the College of Recreation, Physical and Health Education at Brigham Young University for a number of years. He left Brigham Young to become executive secretary of the New York State Association for Health, Physical Education and Recreation. At the time of his death, he was a special consultant and teacher at Montclair State College, Upper Montclair, New Jersey.

Dr. Nash held high offices in many health, physical education, and recreation organizations. He had been president of the American Association for Health, Physical Education and Recreation; chairman of the Department of School Health and Physical Education of the National Education Association; national chairman of physical education of the National Congress of Parents and Teachers, and many others. He was one of the founding fathers and later secretary and president of the American Academy of Physical Education. He was a long time member of the National College Physical Education Association.

Dr. Nash was the author of some 15 books, wrote numerous magazine articles, and edited many professional magazines and books. Through such works as *Physical Education: Interpretations and Objectives*, *Physical Education: Organization and Administration*, and *Philosophy of Recreation* he helped to shape and form the nature of health, physical education and recreation education.

Through conscientious devotion to the elevation of his chosen profession to a respectable position in the educational and academic world, Dr. Nash was one of the most influential leaders in obtaining acceptance of physical, health, and recreation education as legitimate intellectual disciplines. During his lifetime he was entrusted with many tasks of local, national, and international scope. Each of these was completed with distinction. Many honors and much recognition were bestowed upon him for his contributions to the profession. All of these he wore with humility. The loss of his wise and courageous leadership will be great but his influence on the profession will continue for many generations.

GUY W. NESOM (1908-1965)

"Responsibilities gravitate to the person who can shoulder them; power flows to the man who knows how." The concepts expressed in this statement, taken from a Newsletter edited by Guy W. Nesom in 1946, must have been some of the guiding principles by which he charted the course of his life.

Guy W. Nesom was born in Tickfaw, Louisiana in 1908. He attended school in that area and graduated from Hammond High School where he was an outstanding student. After graduation, he attended Louisiana State University where he earned both the bachelor's and master's degrees. He later did graduate study at the University of Michigan and the University of Illinois, and was granted the Ed.D. degree from George Peabody College for Teachers in Nashville, Tennessee.

While a student at Louisiana State University, Dr. Nesom participated in intercollegiate footbal and track and field. His prowess in football was confirmed by the fact that he was selected as a member of the All-Southern Football Team in 1928, and again in 1929. In 1932 he qualified for the American Olympic track and field team. In addition to these honors and achievements, he was chosen as the outstanding cadet officer in the ROTC during his senior year. Later in life he was initiated into the Louisiana State University Athletic Hall of Fame.

Dr. Nesom began his teaching career at Bolton High School. Before coming to Northwestern State College at Natchitoches, Louisiana in 1937, he taught and coached at Louisiana State University. However, the major portion of his professional career was spent at Northwestern State College where he became chairman of the Department of Health and Physical Education. During the 28 years at Northwestern, he worked diligently and conscientiously to improve the quality of education and physical education at the college and in Louisiana. He initiated programs of intramurals, recreation, physical fitness, and teacher education in physical education which became models for other schools and colleges. As a result of his work and devotion to high educational standards, he became prominent in education not only in Louisiana, but also in the South and nation. The respect and esteem which was held for him by the administration at Northwestern State was acknowledged when he was appointed Dean of the School of Education at that institution in 1964. He held this position until the time of his death.

Dr. Nesom's drive for excellence was made manifest by his membership and participation in professional organizations. He held membership in the Phi Epsilon Kappa, American Association for Health, Physical Education and Recreation, the American Association of University Professors, the American School Health Association, the Louisiana Teachers Association and many others. He had been a member of the NCPEAM since 1947. He served as an officer and was a member of many important committees in these organizations. Ne was past president of the Southern Association for Health, Physical Education, and Recreation and the Louisiana Association for Health, Physical Education, and Recreation. Both of these organizations gave recognition to his work by presenting him with an honor award.

Dr. Nesom had a keen sense of social responsibility and a deep feeling of spiritual necessity. He was a member of the First Methodist Church of Natchitoches where he served in many leadership capacities. He also participated in many community affairs outside the college circle.

Dr. Nesom is survived by his wife, Marion Cromwell Nesom; a son, Guy Lane Nesom who is a student at Davidson College; and, a daughter, Patricia Gayle Nesom.

Physical Education has lost the talent, experience and proven leadership of a truly professional man and humanitarian. Members of the NCPEAM express their sincere sympathy to the family of Guy W. Nesom.

AMOS ALONZO STAGG, SR. (1862-1965)

Amos Alonzo Stagg, the son of a cobbler, was born in West Orange, New Jersey in 1862 during the turbulent days of the Civil War. He attended Philips-Exeter Academy in order to prepare for acceptance by Yale University where he wanted to study for the ministry. He did qualify for Yale, enrolled there, and went on to become one of the finest athletes and best known alumnus of that great university. He was a member of Walter Camp's first All-American Football Team. It has been said too that he was Yale's greatest baseball pitcher. When he graduated in 1888, he turned his back on no less than six offers from professional league baseball clubs to devote his energies and talents to the coaching of amateur sports. He also gave up the idea of becoming a minister.

In 1892, after two years of coaching football at Springfield College, he moved to the University of Chicago where he remained for 41 years and became one of the most renowned coaches in the annals of football. During these years at the University of Chicago he coached championship teams not only in football, but also in baseball, basketball, and track and field. His contributions were not confined to the playing field. Mr. Stagg was a founding father of the Western Big Ten Conference, a charter member of the NCAA Football Rules Committee, a member of the American Olympic Committee and a past president and honorary member of the College Physical Education Association. He made many innovations related to football. Some of these were the introduction of the tackling dummy, the use of numbers on players' jerseys, the early use of the forward pass, and others.

When, at the age of 70, he was asked by the administration of the University of Chicago to give up coaching and accept a less active supervisory position, Mr. Stagg went to the College of the Pacific in Stockton, California, where he coached football for 14 additional years. His accomplishments at Pacific were many. He introduced flanker football offense which helped to revitalize football in this area, and by 1939 he had built up a team which defeated the powerful University of California. In 1943 when he was 81, his team was rated sixth in the nation and he was named American Coach of the Year.

At the age of 85, Mr. Stagg left the College of the Pacific to become co-coach with his son, Amos Alonzo Stagg, Jr. at Susquehanna University in Pennsylvania. In 1951 Susquehanna had its first undefeated season.

In 1953, because of the poor health of Mrs. Stagg, he retired from active coaching and returned to Stockton where he remained in an advisory capacity at Stockton Junior College until his formal retirement in 1960.

Recognition and honors bestowed upon Mr. Stagg during his life span were legion. Only a few can be identified here. He received many honors in football, baseball, and track and field. Lynn (Pappy) Waldorf stated, "He has had every honor the game of football and those associated with it can bestow." He is the only person to receive the double distinction of being elected to the Football Hall of Fame both as a player and as a coach. He was named All-Time Christian Coach, Football's Man of the Year for Services in 1943, and Fellow of the American Academy of Physical Education in 1946. He was awarded the American Educational Award for 1933, the Boy Scouts of America Silver Buffalo, Northwestern Centennial Award, Christian Athletic Foundation Award in 1950, and many others. These and many additional honors and achievements have gone into the making of the legend of Amos Alonzo Stagg.

A memorial to Mr. Stagg would not be complete without some reference to his deeply spiritual and moral characteristics. The Reverend Myron Herrel, pastor of the Central Methodist Church of Stockton, in his, "Meditations in Contemplation of the Passing of Amos Alonzo Stagg," included a quotation which Mr. Stagg had used in an unpublished work while a student at Yale. It was part of a statement made by Dr. Jenkins L. Jones to the graduating class at Oberlin College and reads as follows: "Be ashamed to die until you have done something for your fellowmen." This philosophy became the pattern by which Mr. Stagg lived his life, and through him it was forged into the lives of the young over many generations .His ministry was athletics and his church was the playing field. In this way he served the youth of our nation for more than 60 years. He gave much to his fellowman.

An account of the life of Mr. Stagg and his accomplishments would not be complete without reference to his wife, Stella R. Stagg, who preceded him in death by a few months. They were married in 1894 when she was a coed at the University of Chicago. This partnership lasted for 69 years and was dissolved by Mrs. Stagg's death in July, 1964. She was a familiar figure on the sideline of most of his games. Some say that in her time she was the greatest living woman expert on football.

Mr. Stagg is survived by two sons and a daughter, seven grandchildren, and seven great-grandchildren. His sons are: Amos Alonzo Stagg, Jr., a Chicago stockbroker; and Dr. Paul Stagg, Chairman of the Department of Physical Education and Intercollegiate Athletics at the University of the Pacific. The daughter is Mrs. Ruth Lauren of Chicago.

RESOLUTIONS COMMITTEE

WHEREAS, this has been a highly successful meeting, and

WHEREAS, provision for transportation, boarding, housing, and recreation of the members of the Association was effectively planned and carried out,

BE IT RESOLVED that the members of the NCPEAM extend their sincere appreciation and thanks to:

The management and employees of the Warwick Hotel, Philadelphia, Pennsylvania

The Convention Manager, Tom Evaul, his committee, and faculty and officials of Temple University

The Program Chairman, officers, program participants of the Association, and all others who cooperated to make this meeting a success.

WHEREAS the Higher Education Act of 1965 has been passed by both Houses of Congress BE IT RESOLVED that the National College Physical Education Association for Men appoint a Legislative Committee to further interpret the Act, work closely with existing allied organizations and disseminate their findings to the membership. BE IT FURTHER RESOLVED that the membership of the NCPEAM give every encouragement and support to the work of this important Committee.

Respectfully submitted,
Spurgeon Cherry
Chairman

POLICIES COMMITTEE

The chairman contacted the members of the Policies Committee to whom he forwarded copies of the Operating Code and a copy of all policies written pertinent to the operation of the Association. The consensus of two-thirds of the membership of the committee is that the policies, as they now stand, are well stated and that there is no need for revision at this time.

Respectfully submitted,
Frank D. Sills
Chairman

POLICIES

This section contains all current policies formally adopted by the Association to govern its affairs. For the purposes of our Association, a policy may be defined as a settled course of action to be followed in conducting the affairs of the organization.

In many cases, the provisions of the Constitution and By-Laws of the Association are not definitive. These provisions are implemented into action through the medium of policies and procedures. These policies and procedures tend to give continuity and uniformity to Association activities over a considerable period of time, irrespective of the changes that occur continuously among its officers and members. It is also through the medium of policies and procedures that the Association gears itself to the fluctuations of the times (1954, *57th Proceedings*, p. 222.)

Achieving Association Purposes

I. Association Objectives
The Association shall:

a. Use every influence to improve present programs in the schools at all levels to the end that boys and girls of the nation have adequate opportunity to develop desirable attitudes, knowledge and skills in physical education (1950, *53rd Proceedings*, p. 128.)

b. Support all efforts attempting to establish desirable athletic practices at each educational level to the end that physical education can make its maximum contribution to the welfare of the participant (1954, *57th Proceedings*, p. 209.)

c. Engage in activities looking toward the promotion of research designed to improve the quality and scope of programs of college health education, physical education, and recreation through (a) research activities of Association committees; (b) Association-approved studies by selected graduate students in colleges and universities; (c) collaboration with other organizations conducting meetings and in the publications of the Association; and (d) serving as a clearing house for research in college health education, physical education, and recreation (1954, *57th Proceedings*, p. 223.)

d. Commit itself and its membership to a policy of aggressively seeking to recruit into physical education an increasing number of young people possessed of ability and interests in the natural and social sciences, in the humanities, and in communication skills. And that such young people be permitted modification of their undergraduate curricula and be guided into graduate programs adapted to developing their special skills in the interests of research, philosophy, and interpretation related to physical education; and that the College Physical Education Association assign to a standing committee or to a special committee the task of conducting a year-round program of stimulating the execution of this resolution and discovering and reporting specific illustrations where and how progress has been made in its execution (1959, *63rd Proceedings*, p. 181.)

2. Coordinating with Other Agencies

The Association shall:

a. Cooperate with other education agencies to improve teacher education (1951, *54th Proceedings*, p. 155.)

b. Cooperate with other educational agencies in promoting the objectives of health education, physical education, and recreation (1952, *55th Proceedings*, p. 150.)

c. Call upon all school and college administrations to secure properly qualified professional personnel to teach, coach and administer physical education and athletic programs (1952, *55th Proceedings*, p. 149.)

d. Cooperate with other educational organizations in sponsoring and/or having official representation at conferences in the fields of health education, physical education, and recreation (1954, *57th Proceedings*, p. 238.)

e. Coordinate whenever possible the work of committees and projects with similar committees from other professional organizations (1954, *57th Proceedings*, p. 196.)

f. Cooperate with other professional societies in the formulation of education standards and in recommending them to colleges and universities for the development and control of programs of health education, physical education, and recreation (1954, *57th Proceedings*, p. 223.)

3. Basic Instruction Program

The Association shall:

a. Vigorously oppose the practice of substituting band or ROTC for the physical education basic instruction program (1950, *53rd Proceedings*, p. 150.)

b. Encourage colleges and universities throughout the country to abolish the practice of granting military service as blanket credit for physical education (1951, *54th Proceedings*, p. 153.)

ADMINISTERING ASSOCIATION AFFAIRS

1. Membership

The Association shall:

a. Seek to retain new members by better acquainting them with the traditions and present purposes of the organization (1950, *53rd Proceedings*, p. 140.)

2. Annual Meeting

The Association shall:

a. Have as the primary purpose of the regular meetings of the Association to provide the largest number of members with opportunities to discuss the major areas of the college program of health education, physical education and recreation. These meetings shall be planned so as to include wide participation among members (1954, *57th Proceedings*, p. 223.)

b. Select the dates of the annual meeting as to make possible the maximum attendance by the members of the Association. To equalize, over a period of years, the distance traveled to meetings of the Association residing in the various sections of the country, the principle of periodic rotation among cities shall be given consideration in the selection of the site for the annual convention (1954, *57th Proceedings*, pp. 223–4.)

c. Consider locations in selecting the site for the annual convention that place no restriction on Association members with reference to housing, attendance at meetings, or other factors tending to divide the membership (1956, *59th Proceedings*, p. 382.)

d. Select conference sites for the most part, in areas with the heaviest concentration of members. "Local color" or wide attractions should not necessarily be a determining factor. On occasion, the convention site should be utilized as a "foil" to attract new members. The primary consideration, however, is to serve the present membership (1958, *61st Proceedings*, p. 31.)

e. Limit to three days the length of the official convention. This does not prevent any group from meeting before the convention, but groups shall not be included in the official program, nor shall any papers or summaries of preconvention meetings be a part of the Proceedings (1955, *58th Proceedings*, p. 247.)

f. Require papers submitted for presentation to be limited to the basic essentials of the topic. In no case shall papers exceed 2000 words, including committee reports. The editor shall have authority to make deletions or changes necessary to conform to this policy (1955, *58th Proceedings*, p. 24.)

g. Require that only abstracts of prepared papers be presented at annual meetings, thus allowing more time for discussion (1954, 38th *Proceedings*, p. 16.)

h. Take no official action to assist special interest groups in scheduling in formal meetings (1959, *63rd Proceedings*, p. 165.)

3. Committees

The Association shall:

a. Require each committee to submit its operating code to the Operating Codes Committee, who will in turn request that the Constitution Committee check each code to see that it is in keeping with the constitution (1954, *57th Proceedings*, p. 221.)

b. Rotate committee membership in order to involve as many members as possible (1955, *58th Proceedings*, p. 218.)

c. Provide a fund for use by the President in executing his duties. Normally all of his expenses shall be borne by his institution, therefore, this fund is to serve only as an emergency fund (1955, *58th Proceedings*, p. 245.)

4. Publications

The Association shall:

a. Disseminate deliberations of the official meetings through the published proceedings and through reports covering such special projects as may be authorized by the Association (1954, *57th Proceedings*, p. 233.)

b. Cooperate with the AAHPER for publication of the annual *Proceedings* (1957, *60th Proceedings*, p. 358.)

c. Carefully edit all publications of the Association to make certain that they represent a high quality of scholarship and follow approved methods of conducting and reporting educational research (1954, *57th Proceedings*, p. 223.)

d. Not accept advertising or other extraneous material for publication in the literature of the Association (1954, *57th Proceedings*, p. 223.)

5. Projects

The Association shall:

a. Approve only those studies which benefit the Association (1951, *54th Proceedings*, p. 160.)

b. Not sponsor studies, but only approve them. (1951, *54th Proceedings*, p. 164.)

c. Place in the hands of the appropriate committee requests by students seeking approval of the Association for doctoral studies. Procedures to implement this policy will be included in the operating code of the committee (1952, *55th Proceedings*, p. 146.)

d. Sponsor and conduct projects as approved by the Association. Such projects should involve little or no expense. They must be of a nature that their business can be readily transacted by mail, and they should have a beginning and ending (1954, *57th Proceedings*, p. 207.)

6. Historical Records

The Association shall:

a. House historical documents in a college library (1954, *57th Proceedings*, p. 238.)

b. Annually give two copies of the *Proceedings* to the library designated by the Association to house its historical materials (1957, *60th Proceedings*, p. 331.)

c. Preserve its historical records by duplicating the original copies. Duplicate copies can then be distributed upon request from the library designated by the Association to house its documents (1958, *61st Proceedings*, p. 299.)

7. Delimitation of Function

The Association shall not:

a. Serve as an accrediting agency to evaluate specific programs of health education, physical education, or recreation in individual colleges (1954, *57th Proceedings*, p. 224.)

b. Involve itself directly in activities concerning the relationship of a particular college to its employees in such matters as employment, promotion, tenure, dismissal, or academic freedom (1954, *57th Proceedings*, p. 224.)

8. Maintenance of the Policy Statements

The Association shall:

a. Assign the Secretary-Treasurer to be responsible for maintenance of the policy book. He shall make its contents available to officers and members whenever the need arises (1954, *57th Proceedings*, p. 223.)

b. Direct the Secretary-Treasurer to include new policies in the policy book or to revise or delete those previously established as approved at a regularly scheduled business meeting at the annual convention. Action on policies may be taken at any regular business meeting of the Association without the necessity of prior notice (1954, *57th Proceedings*, p. 223.)

RESEARCH COMMITTEE

The Research Committee did not have an opportunity to meet during the year, but has corresponded in an attempt to start a cooperative research project. A proposed cooperative study was mailed to the Committee members in June, but since the suggestions on this proposal are incomplete, a progress report will not be made at this time.

The Committee met yesterday to discuss action in light of the meeting of the AAHPER Task Force on Research, which was held last July. It was decided to temporarily suspend the cooperative research project in order to study the Task Force report to ascertain how it might affect this project.

The Task Force proposed 11 recommendations regarding the coordination of Research in Health, Physical Education, and Recreation, which have been approved by the Board of Directors of the AAHPER. Since these recommendations will attempt to solve many of the problems discussed during the past several years by our Committee, we have volunteered to assist the AAHPER by any and all means possible to implement the recommendations of the Task Force.

Respectfully submitted,
Burris F. Husman
Chairman

President's Committees

EDUCATIONAL TELEVISION COMMITTEE

This large and widely-dispersed committee was unable to schedule a meeting of its members during this past year. Several of us met in Minneapolis and a few of us met for a short time in Dallas during the National Convention of AAHPER. All activities of this committee have been carried on by correspondence.

Starting in 1962, this committee has sent an annual recommendation to the Midwest Program on Airborne Television Instruction, Inc., Purdue University, to include physical education in its offerings. Each year the answer has been the same: the appropriate advisory committees on curricula would take our recommendation under consideration. The chairman of our committee is the chairman of the Committee on Utilization of Educational Television in Physical Education of AAHPER; therefore, he sent the annual recommendation to MPATI in behalf of both committees. We received a favorable reply. MPATI would like to join with one or both committees to seek funds to develop an 18-lesson televised course in elementary school physical education. This would require an expenditure of $25,000 to $30,000. Steps are now being taken to investigate the possibilities of pursuing this project.

Individual members of this committee have continued to send the chairman reports concerning additional new projects in television for health and physical education throughout the country. In the near future a list of all the institutions utilizing televised instruction in physical education will be compiled and a bibliography of written and recorded materials concerning television in physical education will be developed.

The committee has received some course outlines and teacher manuals for televised physical education courses. The collection of materials has expanded slowly since the committee decided to serve as a clearing house for such information.

Requests for information gathered by the committee continue to be received; they are being supplied by correspondence.

A number of new ventures have been reported:

1. Jean B. Daughterty and Jack B. Daughterty (Indiana University) have produced two half-hour television shows depicting physical education programs which were observed during a sabbatical leave. These shows portray programs from elementary through senior high school, and will be available after January 1, 1966. WHEN-TV, Syracuse, New York, a privately-owned station, sponsored the project.

2. The Department of Physical Education for Men, Washington State University at Pullman, has developed a television film entitled "How to Keep in Shape." The purpose of the televised show is to present the objectives and methods of fulfilling the physiological purpose of physical education.

3. The University of Washington at Seattle has produced a series of television shows on beginning and intermediate golf, physical fitness, physiological fitness, isometrics, gymnastics, and skiing fundamentals.

4. At Ithaca College, Ithaca, New York, Helen Blauvelt, a biologist, is teaching anatomy via a closed-circuit television system.

5. At the University of Illinois, College of Physical Education, a series of one-half hour television programs is being developed concerning the basic instruction skills in physical education.

6. Dolores M. Curtis of the University of Hawaii in Honolulu reports the development of videotaped materials in elementary school physical education and teacher education.

This committee has served a useful purpose during its brief existence and several important contributions can be cited. One of them, the formation of a Committee on the Utilization of Educational Television in Physical Education, AAHPER, makes the continuation of our committee in its present form of doubtful value. In many instances, it will be duplicating the work of the larger committee. Since college physical education is well represented on the AAHPER committee, it is recommended that our present committee be discontinued and the members of NCPEAM be encouraged to work with the AAHPER committee whenever and wherever the opportunity is presented.

Respectfully submitted,
Chalmer G. Hixson
Chairman

CONSTRUCTION AND EQUIPMENT COMMITTEE

After reactivation in 1964, the Construction and Equipment Committee set to work identifying those projects which it felt would be of greatest value to the Association. At the Minneapolis meeting of NCPEAM the Committee proposed two projects: to serve as a repository for drawings of new construction which could be made available for display and study, and to develop a descriptive brochure, after evaluating and analyzing materials which had been submitted.

This past year was spent in studying various means of implementing these projects. The work of the Committee was carried on mainly through correspondence, although a brief meeting was held for those members in attendance at this convention. Architects as well as firms specializing in the reproduction and storage of architectural drawings were consulted. The recommendations which the Committee submits to the membership are based on the work of the past year.

1. It became apparent quite early that thought needed to be given to standardizing methods of presenting materials to the Committee, and the feasibility of storing these materials in some convenient and usable form. Since one of the basic objectives of the Committee is to serve as a repository for drawings of new construction, a convenient and readily usable method of storage must be employed. To accomplish this, it is recommended that a standardized process of reducing and reproducing the materials submitted be adopted. It appears this can best be done by some photographic process, several of which are available.

2. The second objective of the Committee, that of developing a descriptive brochure, almost dictates the use of a photographic technique which would permit reproduction of the original drawings in some form. Master copies or stencils can readily be made from film negatives, which in turn are used to produce the multiple copies. It is therefore recommended, for the sake of uniformity, that a standardized system of submitting materials be employed so that when the brochure is produced, the drawings and sketches would be uniform throughout. The most usable type of drawing in such a brochure would be a schematic drawing. This is a drawing to scale, with no dimensions given on the print, the lettering is large and uniform in style, no details such as materials or finishes are included, and the drawing is keyed rather than the information being in print. The type of drawing submitted must lend itself to whatever process of reduction and reproduction is chosen and therefore could be blueprint, blueline, tracing, or sepia.

3. If recommendations (1) and (2) above are accepted it would involve some expense for the film reduction and reproduction of the materials submitted. Therefore the Committee recommends that the project be financed through the Association with the suggestion that the Athletic Institute, one or more of the foundations, or a federal agency be approached for funds. If it becomes necessary for the Association to finance a portion of the project, the investment could be recovered through the production of a brochure which could be sold. If this means of financing is not possible, the cost of the project should rest with those institutions submitting materials to the Committee.

Respectfully submitted,
John W. Masley
Chairman

COMMITTEE ON CONFERENCE TIME AND SITE

In considering the choice of a site for the 1967-68 conference, the committee was instructed that the conference should be held in the South Central region of the United States, according to the rotation plan.

All members of the committee were solicited as to possible sites, and five cities, Cincinnati, Houston, Kansas City, Louisville, and New Orleans were nominated.

After due consideration, the committee recommended to the Executive Committee that the December, 1967 or January, 1968 conference be held in Houston, Texas with the exact dates to be determined by the Executive Committee after consultation with the local conference manager on the availability of hotel space and other facilities.

If for any reason Houston is unable to host the convention, New Orleans is the second choice of the committee.

Respectfully submitted,
John H. Shaw
Chairman

HOTEL CONTRACTS COMMITTEE

My assignment was to make recommendations for a possible contract between NCPEAM and hotels hosting the annual meeting. In studying this assignment, the following contacts were made:

1. Corresponded with George Anderson, Associate Executive Secretary of AAHPER who handles the Association Conventions.
2. Wrote a letter to each district president asking for possible contracts used by our National Association Districts.
3. Studied the contract used by the Texas Association.
4. Read the NCPEAM agreements for the following conventions: Minneapolis, Dallas, San Francisco, Kansas City, and Washington, D.C.

After considering all of this information the following recommendations are made:

1. First of all, the convention manager should realize that the hotel business is competitive, and if more than one hotel in a given city meets the needs of the Association, all such hotel managers should be contacted and allowed to bid for the annual meeting.
2. The Chamber of Commerce should be contacted for help in ascertaining which hotels are suitable for the annual meeting and which conventions are already booked.
3. It would seem that the Association might best be served by not pushing for a formal contract, but rather by stating in a letter the needs of the Association and permiting the hotel management to respond to these needs.

CHECKLIST FOR HOTEL ARRANGEMENTS

There are many facets to consider and perhaps a checklist would be in order to guide the convention manager:

1. The exact dates of the convention should be noted, including the meeting of the Executive Council the night before the convention opens.
2. A certain number of rooms should be reserved. Our convention has been running at the 200 mark for several years. The price for single, double, triple, and additional roll-away beds should be included.
3. The booking of other conventions in the hotel should be ascertained. Our Association is not large enough to ask a hotel to refrain from booking another convention; however, there must be an agreement that a larger convention will not be booked which will "swamp" the NCPEAM annual meeting. A careful check should be made for conventions ending as the NCPEAM meeting starts. Many of our members will want a room the night before the first session and holdovers from a previous convention could cause complications. Much of this information can be checked with the Chamber of Commerce.
4. The meeting rooms needed are four in number—two to house 100 people, one for 200, and a room for the Executive Council, housing approximately 25. These rooms should be booked for the exclusive use of NCPEAM during the annual meeting.
5. Complimentary rooms should be as follows:
   a. One suite for the president.
   b. A suite to be shared by the president-elect and secretary-treasurer.
   c. A hospitality room for the convention manager. This latter is needed because the manager may well want to stay in the hotel to be available. This arrangement is of great assistance to both the Association and to the hotel management.
6. The price of meals should be known, with the arrangements concerning the guaranteeing of a suitable room for breakfasts and luncheons. The attendance at meals in the past few years has been around 100 persons.

7. The hotel should handle the reservation cards and make them available to the publicity committee for mailing to the members. Cards should be sent back to the hotel rather than to the convention manager or one of his committee chairmen.

8. The registration area should be checked carefully, and agreement should be reached as to its location. It should be located as close as possible to the meeting rooms and should be large enough to register. If the hotel does not furnish mimeograph or ditto service, space should be provided for this service by the convention manager and his staff.

9. A telephone should be located in the registration area; however, no out-going calls should be charged to the Association unless authorized persons have okayed the call. Authorized persons should be the president, secretary-treasurer or convention manager.

10. Custodial service should be provided for arrangement of chairs during the meetings and the setting up of other equipment. This should be gratis.

11. The public address systems should be furnished free of charge in the meeting rooms as requested.

12. Participants should be allowed to operate audiovisual equipment furnished by the convention manager and his staff. This might be a problem, as in some cases unions may demand exclusive rights for this service. Sometimes the hotel manager would rather just ignore this problem and let the Association handle its own affairs.

13. The hotel should agree to allow the convention manager's staff to place some attractive signs indicating welcome to NCPEAM members and directing members to the registration table.

14. The parking situation should be ascertained. Free parking, plus in and out service is most desirable.

CHAMBER OF COMMERCE

In addition to assisting with hotel selection, the Chamber of Commerce in most situations will furnish registration cards, pencils, literature of the local area, and maps. They will usually also furnish free of charge two typewriters, plus two operators to be on hand for registration, as needed.

Respectfully submitted,
Deane Richardson
Chairman

Joint Committee

COMMITTEE ON PHYSICAL EDUCATION AND ATHLETICS

The Joint Committee on Physical Education and Athletics had as its major project in 1965 the Third National Athletic Directors Conference which was held in Washington, D.C. on June 16–18. Members of the Joint Committee serving during the years were as follows:

AAHPER: Robert Bronzan, San Jose State College; Ray Duncan, West Virginia University; James Long, University of New Hampshire

NCPEAM: Lysle K. Butler, Oberlin College; M. R. Clausen, University of Arizona; Thomas Scott, Davidson College

NCAA: David Busey, Lycoming College; Stuart Holcomb, Northwestern University; Thomas McDonough, Emory University

Secretary-Treasurer: Roswell D. Merrick, AAHPER staff

During the past several years the Joint Committee has considered the idea of establishing a professional association for directors of athletics. The need for such an association has been apparent since athletic directors generally are only produced by experience in the field. It was felt that a national association could define the position as a profession, give it status in education, and establish common standards. With this in mind the Joint Committee with some additions became the Planning Committee, and the structure for a National Association of College Directors of Athletics was proposed and accepted at the Washington Workshop.

Attending the Workshop were approximately 175 directors. A constitution was presented and accepted and the new professional association is now in operation. One of the main items of business at the Washington Workshop was the election of officers for the new Association, as follows:

President: James J. Corbett, Louisiana State University
President-elect: Richard Larkins (Chairman, Program Committee), Ohio State University
Secretary pro-tem: Lysle K. Butler, Oberlin College

District Representatives—College:

William Arce (Site & Dates Committee), Claremont College (Program Committee)
Samuel E. Barnes (Site & Dates Committee), Howard University
John Hancock (Program Committee), Colorado State College
Bob Primrer (Membership Committee), Ball State University
Volney C. Ashford (Membership Committee), Missouri Valley College
Joe F. Dickson (Program Committee), East New Mexico University
Lloyd H. Lux (Site & Dates Committee), Bates College
Marshall S. Turner, Jr. (Finance Committee), Johns Hopkins University

District Representatives—University:

Robert Bronzan (Chairman-Membership Committee), San Jose State College
J. Orlean Christian (Finance Committee), University of Connecticut
Jess L. Neely (Program Committee), Rice University
Tom Scott (Chairman-Site & Dates Committee), Davidson College
G. H. Chalmers (Program Committee, Site & Dates), Iowa State University
James Jack (Membership Committee), University of Utah
Bill Orwig (Membership & Program Committee), Indiana University
Albert W. Twitchell (Chairman, Finance Committee), Rutgers University

In addition to the main business of organizing the NACDA, a number of worthwhile programs were presented pertinent to the duties and responsibilities of a college athletic director.

The NACDA will hold an annual meeting in June. The Joint Committee is now relieved of further responsibility on this project and we have not had opportunity to plan for future developments.

Respectfully submitted,
M. R. Clausen
Chairman

Honorary Members
1966

*Attended 1966 Convention

(1) Past President

(2) Past Secretary-Treasurer

Alderson, C. J., Ed.D. (1950, 1959)
University of Texas
Austin, Texas

Altman, George J., M.Ed. (1936, 1955)
202 Belmont
Los Gatos, California

Barr, J. Shober, M.A. (1954, 1965)
Franklin and Marshall College
Lancaster, Pennsylvania

Bartlett, Fay C., B.S. (1940, 1955)
222 Warren Square
Bethlehem, Pennsylvania

Bilheimer, C. E., M.Ed. (1930, 1954)
Gettysburg College
Gettysburg, Pennsylvania

Brace, David K., Ph.D. (1925, 1964)
2205 N. Lamar Blvd.
Austin, Texas

Brown, Hubert E., Ph.D. (1947, 1958)
611 Mandarin Lane
Walnut Creek, California

Brownell, Clifford L., Ph.D. (1930, 1961)
25 Woodford Road
Avon, Connecticut

Bullock, James E., M.A. (1936, 1960)
Williams College
Williamstown, Massachusetts

Clapp, Raymond G., Ph.D. (1906, 1945)
465 7th Avenue North
St. Petersburg, Florida

Evans, Harold M., B.P.E. (1941, 1960)
25 Prospect St.
Falmouth, Massachusetts

Fetzer, Robert A., M.A. (1925, 1952)
University of North Carolina
Chapel Hill, North Carolina

Hansen, Canute, D.D.S. (1926, 1955)
181 Maple Avenue
Rockville Center, New York

Hanson, Ray, M.Ed. (1958, 1964)
1351 Parkview Drive
Macomb, Illinois

Harmon, John M., Ed.D. (1934, 1959)
610 S. Elm
Ottawa, Kansas

House, Howard H., Ph.D. (1932, 1955)
Box 203
Asotin, Washington

Ilowit, Roy, Ed.D. (1957, 1964)
Northern Blvd. at Brookville, P.O.
Greenvale, New York

Jenkins, Sidney, M.A. (1950, 1958)
Box 535
Granville, Ohio

Jones, John Oliver, M.S. (1948, 1965)
Summit Park
Park City, Utah

(1) Keller, Louis F., Ph.D. (1923, 1959)
1340 Keston St.
St. Paul 8, Minnesota

Kiphuth, Robert J.H., M.P.E. (1932, 1959)
Yale University
New Haven, Connecticut

Knox, Walter S., Ph.D. (1959, 1965)
Route 1, Box 365A
Jacksonville, Texas

Langton, Clair Van Norman, Ed.D.
(1939, 1965)
Oregon State College
Corvallis, Oregon

Lavik, Rudolph H., M.A. (1952, 1963)
1185 Maple Avenue
Tempe, Arizona

(1) Livingston, Walter J., B.S. (1922, 1952)
333 12th Avenue
Indian Rocks Beach, Florida

(1) *Luehring, Fred W., Ph.D. (1920, 1951)
314 North Chester Road
Swarthmore, Pennsylvania

(1) Marsh, Allison W., M.Ed. (1922, 1958)
62 Hillcrest Place
Amherst, Massachusetts

Martin, J. Frederick, M.A. (1925, 1963)
Wesleyan University
Middletown, Connecticut

Masley, A. L., M.A. (1945, 1960)
University of Wisconsin
Madison, Wisconsin

(1) (2) Metcalf, Thomas N., M.A.
(1920, 1956)
1208 San Miguel
Santa Barbara, California

(1) Mitchell, Elmer D., Ph.D. (1931, 1958)
University of Michigan
Ann Arbor, Michigan

(1) Nichols, John H., M.D. (1918, 1955)
Oberlin College
Oberlin, Ohio

Olds, Lloyd W., Ph.D. (1932, 1965)
Eastern Michigan College
Ypsilanti, Michigan

Olson, Carl, B.S. (1933, 1959)
515 Glasgow Road
Pittsburgh, Pennsylvania

Raabe, Howard W., M.S. (1950, 1957)
1148 S. E. Powell Blvd.
Portland, Oregon

Rider, George L., B.A. (1921, 1960)
216 W. Church Street
Oxford, Ohio

Rockafeller, Harry J., B.S. (1933, 1961)
10 Landing Lane, Apt. 9-D
New Brunswick, New Jersey

Sampson, Harry W., B.S. (1961, 1965)
11 Downing Road
Hanover, New Hampshire

(1) (2) Scott, Harry A., Ph.D. (1923, 1959)
Box 4726
Carmel, California

Settle, Caskey, Ed.D. (1935, 1964)
New Mexico Highlands University
Las Vegas, New Mexico

Stafford, George T., Ed.D. (1939, 1965)
University of Illinois
Urbana, Illinois

(1) Staley, Seward C., Ph.D. (1927, 1961)
University of Illinois
Urbana, Illinois

Strehle, Robert L., M.A. (1958, 1960)
1019 Dartmouth Avenue
Claremont, California

Swain, Leslie E., M.A. (1927, 1943)
Apt. 401, 830 N. Shore Drive
St. Petersburg, Florida

Toomey, Irving F., B.S. (1936, 1957)
University of California
Davis, California

Wallace, Stanley M., B.S. (1932, 1959)
University of Maine
Orono, Maine

Whitaker, Berry M., B.A. (1949, 1959)
University of Texas
Austin, Texas

(1) Williams, Jesse F., M.D. (1920, 1946)
Box 656
Carmel, California

Active Members
1966

*Abbot, Richard R., M.S. (1966)
Western Illinois University
Macomb, Illinois

Abraham, Joseph N., M.S. (1955)
Hobart College
Geneva, New York

Adams, John Richard, M.S. (1964)
Eastern Michigan University
Ypsilanti, Michigan

Adams, L. Carroll, Ed.D. (1937)
Columbia University
New York, New York

Adams, William, Ph.D. (1964)
University of California
Davis, California

Alexander, Louis A., M.A. (1931)
University of Rochester
Rochester, New York

Allen, Noah, M.S. (1962)
Wichita State University
Wichita, Kansas

*Alley, Louis E., Ph.D. (1955)
State University of Iowa
Iowa City, Iowa

Anderson, Ernest W., M.Ed. (1956)
Augsburg College
Minneapolis, Minnesota

Anderson, Eugene W., M.S. (1961)
Chico State College
Chico, California

Anderson, Jackson M., Ph.D. (1949)
AAHPER
1201 16th St., N.W.
Washington, D. C.

Anderson, William G., Ed.D. (1965)
Teachers College
Columbia University
New York 27, New York

Andrews, Sydney H., M.A. (1965)
Box 140
Boone, North Carolina

*Antonacci, Robert J., Ed.D. (1949)
Temple University
Philadelphia, Pennsylvania

Appenzeller, William S., Ph.D. (1965)
1900 Dartmouth
Boulder, Colorado

Appleton, Lloyd O., M.A. (1949)
U.S. Military Academy
West Point, New York

Arbaugh, Gregg, M.A. (1961)
Adrian College
Adrian, Michigan

*Asprey, Gene M., Ph.D. (1960)
State University of Iowa
Iowa City, Iowa

B

Bailey, Don C., M.A. (1964)
North Texas State University
Denton, Texas

Bair, Wesley Dean, M.S. (1964)
Rural Route #1
Macomb, Illinois

Balch, Roland E., M.Ed. (1964)
University of Colorado
Boulder, Colorado

Ballenger, Frank, M.A. (1949)
Kent State University
Kent, Ohio

Ballou, Ralph B., Ph.D. (1962)
University of Oregon
Eugene, Oregon

Bank, Theodore P., M.A. (1949)
Athletic Institute
Chicago, Illinois

Baptista, Robert C., M.Ed. (1960)
Wheaton College
Wheaton, Illinois

*Barber, Arlan F., M.A. (1966)
University of Massachusetts
Amherst, Massachusetts

Barlow, Thomas E., B.A. (1954)
University of Texas
Austin, Texas

Barrow, Harold M., Ed.D. (1950)
Wake Forest College
Winston-Salem, North Carolina

*Barrow, Loyd M., Ed.D. (1957)
Southern Connecticut State College
New Haven 15, Connecticut

Bartelma, David C., Ed.D. (1949)
University of Colorado
Boulder, Colorado

Bartolome, Candido C., M.P.E. (1950)
26 Mahusay Street
U.P. Village
Quezon City, Philippines

Battinelli, Thomas, CAGS (1965)
State College
Fitchburg, Massachusetts

Bauer, Emory G., M.A. (1957)
Valparaiso University
Valparaiso, Indiana

Baughman, Willis J., Ph.D. (1949)
University of Alabama
University, Alabama

*Bautz, Conrad A., M.S. (1966)
Brooklyn College
Brooklyn, New York

*Bearden, Frank W., Ed.D. (1953)
Rice University
Houston, Texas

*Beck, Eugene E., Ph.D. (1958)
Kearney State College
Kearney, Nebraska

Becker, Charles J., M.S. (1963)
225 E. Evelyn Avenue
Gresham, Oregon

*Begelman, Jack D., Ph.D. (1951)
Hunter College in the Bronx
Bronx, New York

Begenau, Don, M.A. (1957)
Queens College
Flushing, New York

Belisle, James J., P.E.D. (1961)
Fort Hays Kansas State College
Hays, Kansas

*Bennett, Bruce L., Ph.D. (1949)
Ohio State University
Columbus, Ohio

Benson, David W., M.S. (1959)
San Fernando Valley State College
Northridge, California

*Benton, Carl W., Ed.D. (1957)
San Diego State College
San Diego, California

Bergsrud, Owen B., M.A. (1965)
Wisconsin State University
River Falls, Wisconsin

Berrafato, Peter R., B.S. (1949)
University of Illinois
Chicago Circle Center
Chicago, Illinois

*Bethe, Donald Ray, M.S. (1965)
Cuyahoga Community College
Cleveland, Ohio

Bibler, Ralph E., M.A. (1949)
Oberlin College
Oberlin, Ohio

Bierhaus, Frederick W., Ed.D. (1957)
University of Colorado
Boulder, Colorado

Billingsley, Claude W., B.S. (1965)
122 W. Pierce St.
Macomb, Illinois

*Bird, Patrick J., M.S. (1966)
802 4th St., S.E.
Minneapolis, Minnesota

*Bischoff, David C., Ph.D. (1958)
University of Massachusetts
Amherst, Massachusetts

Bishop, Roger M., P.E.D. (1962)
Kent State University
Kent, Ohio

*Bitgood, Paul E., M.Ed. (1966)
University of Rochester
Rochester, New York

Black, W. Darrel, Ph.D. (1965)
Arkansas State College
State College, Arkansas

Blackburn, Robert R., M.A. (1960)
Louisiana College
Pineville, Louisiana

Blair, William O., M.S. (1965)
New Mexico Institute of Mining
and Technology
Socorro, New Mexico

*Blesh, T. Erwin, Ph.D. (1951)
Yale University
New Haven, Connecticut

*Bond, Nelson, B.S. (1966)
Kilmer Job Corps Center
Edison, New Jersey

(1) *Bookwalter, Karl W., Ed.D. (1938)
Indiana University
Bloomington, Indiana

Boring, Warren J., Ed.D. (1954)
Long Beach State College
Long Beach, California

Bosco, James S., Ph.D. (1961)
San Jose State College
San Jose, California

*Bowen, Keith E., Ed.D. (1963)
Eastern Michigan University
Ypsilanti, Michigan

Bowen, Robert T., Jr., Ph.D. (1962)
University of Georgia
Athens, Georgia

Bowers, Richard W., Ph.D. (1965)
181 Delhi, Apt. D.
Columbus 2, Ohio

Brady, George F., Ph.D. (1956)
University of Tennessee
Knoxville, Tennessee

Brigham, Robert J., M.S. (1962)
Northern Illinois University
DeKalb, Illinois

*Brightwell, D. Shelby, P.E.D. (1959)
Kansas State College
Pittsburg, Kansas

*Briglia, Michael, M.S. (1966)
Glassboro State College
Glassboro, New Jersey

Brinley, Eldon D., Ed.D. (1943)
Texas College of Arts and Industries
Kingsville, Texas

Brissman, Leroy C., M.Ed. (1950)
Augustana College
Rock Island, Illinois

*Brodt, Melvin E., M.S. (1964)
Bowling Green State University
Bowling Green, Ohio

Broekhoff, Jan, M.S. (1965)
University of Oregon
Eugene, Oregon

*Brown, Howard S., P.E.D. (1949)
Southern Methodist University
Dallas, Texas

Brown, James K., M.S. (1965)
Alaska Methodist University
Anchorage, Alaska

Bruce, Robert M., M.Ed. (1949)
The College of Wooster
Wooster, Ohio

Bruce, Russell D., M.A. (1965)
Eastern Michigan University
Ypsilanti, Michigan

*Bruess, Clint E., M.A. (1966)
650 Brooke Road
Glenside, Pennsylvania

Brumbach, Wayne B., Ph.D. (1954)
University of Oregon
Eugene, Oregon

Bryant, Fred O., Ed.D. (1961)
Arizona State University
Tempe, Arizona

Buchanan, Henry E., M.A. (1956)
Texas Tech
Lubbock, Texas

Bucher, Charles A., Ed.D. (1954)
New York University
New York, New York

Buck, Charles R., M.E. (1963)
Bldg. B., Apt. 102, Carlson Terraces
Fayetteville, Arkansas

*Bundgaard, Axel C., Ph.D. (1961)
St. Olaf College
Northfield, Minnesota

Bunge, William J., M.Ed. (1964)
University of Missouri
Columbia, Missouri

Burks, Arvil W., Ed.D. (1963)
225 E. Whiteside
Springfield, Missouri

*Burnham, Stanley, Ed.D. (1963)
University of Texas
Austin, Texas

Burrus, Harry C., Jr., Ed.D. (1948)
Washington University
St. Louis, Missouri

Burt, John Joseph, Jr., Ed.D. (1964)
Temple University
Philadelphia, Pennsylvania

Busey, David G., Ed.D. (1964)
Lycoming College
Williamsport, Pennsylvania

Butler, Lysle K., Ph.D. (1931)
Oberlin College
Oberlin, Ohio

C

Caldwell, Stratton F., M.S. (1960)
University of California
Los Angeles, California

*Campbell, David A., M.S. (1956)
State University of New York
Oswego, New York

Candel, Michael S., M.S. (1966)
419-39 Atlanta Avenue
East Rockaway, New York

Capen, Edward K., Ph.D. (1957)
University of Tennessee
Knoxville, Tennessee

Carlson, Nelson T., M.A. (1966)
614 Hawkeye Apts.
Iowa City, Iowa

*Carr, Wilbur L., Ph.D. (1963)
Furman University
Greenville, South Carolina

Carrera, Michael A., M.S. (1966)
Kingsborough Community College
Brooklyn, New York

Carson, William B., M.Ed. (1964)
421 Park View Drive
Girard, Ohio

Carter, John E., Ph.D. (1965)
San Diego State College
San Diego, California

Carter, Richard A., M.A. (1964)
Southern State College
Magnolia, Arkansas

Casady, Donald R., Ph.D. (1961)
State University of Iowa
Iowa City, Iowa

Cataldi, Peter P., M.A. (1964)
Syracuse University
Syracuse, New York

Cearley, Jess E., Ph.D. (1962)
North Texas State University
Denton, Texas

Chacos, Louis G., D.Ed. (1964)
9814 Singleton Drive
Bethesda, Maryland

*Cherry, H. Spurgeon, M.A. (1952)
University of Florida
Gainesville, Florida

Christenson, Irv, A.B. (1947)
Concordia College
Moorhead, Minnesota

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